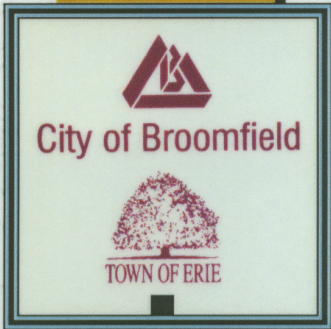
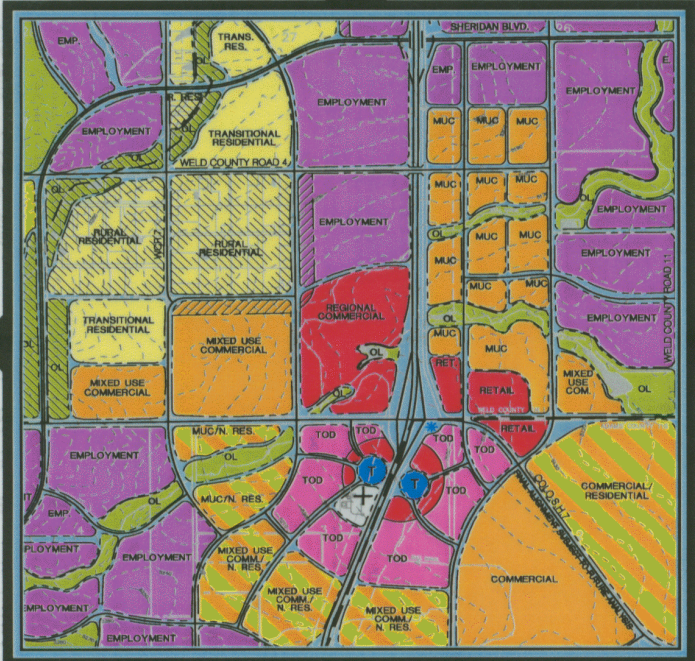


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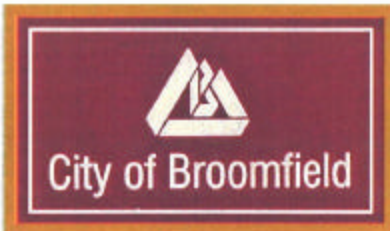
SEPTEMBER, 1999



I-25 SUB-AREA PLAN

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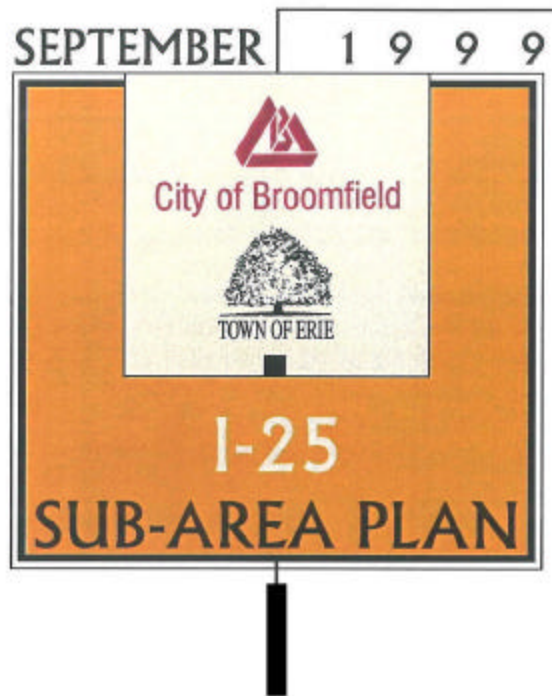
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INTRODUCTION

- Purpose
- Project Planning Area
- Summary of Approach
- Source Documents

Purpose:

The I-25 Sub-Area Plan is the second in a series of planning studies documented to complement the City of Broomfield Master Plan. The previous study was the US 36 Sub-Area Plan, completed in May 1997. The I-25 Sub-Area Plan is similar in scope to the previous Plan, but includes, additionally, a cost estimate document entitled "Opinion of Probable Infrastructure Costs" (included within separate document). Like its predecessor, the Plan also incorporates comprehensive Design Standards for development occurring in the Sub-Area (*Section VI*).

Broomfield's Sub-Area Plans are designed to help achieve several common goals:

- Create a quality "Gateway Image" that conveys the desired vision for the Broomfield community
- Establish a balance of complementary land uses
- Maintain economic stability for the City through value-creation and value-retention
- Provide a means for coordinating planning for infrastructure
- Promote meaningful dialog among landowners, governmental agencies, and others to facilitate communication, cooperation, and successful development results.
- Fulfill intergovernmental commitments made through agreements.

The I-25 Sub-Area Plan (and Design Standards therein) will be used by:

- Land owners in the area
- Various Broomfield agencies and referral agencies, as well as other local governments
- Marketing representatives
- Economic development entities

- Prospective developers and users within the area
- Service-providers, such as utility companies
- Media and other special interest groups.

Similar to Broomfield's Master Plan and the US 36 Sub-Area Plan, the I-25 Plan has been developed to help direct the City's growth in its Northern Gateway vicinity. In this regard, the Plan is an advisory document that City officials will use to assist in the planning and evaluation of proposed development in the area. Portions of the Sub-Area Plan will also be adopted as integral parts of Zoning and Development Codes. To continue to serve as an effective tool, the Sub-Area Plan should be reviewed and updated as the area develops.

In 1997, prior to the commencement of this study, the City of Broomfield entered into an intergovernmental agreement (IGA) with the City of Lafayette and Boulder County.

During the course of this study, the City of Broomfield entered into an IGA with the Town of Erie and City of Thornton respectively. The IGA's established future boundaries of the communities in this area. The terms of these IGA's are reflected in this plan.

Project Planning Area:

The I-25 Sub-Area is located at the City's Northern Gateway vicinity, significantly impacted by the presence therein of Interstate 25, State Highway 7, and the future Northwest Parkway (Exhibit A). The original planning area included approximately 6,700 acres. During the course of the study, however, intergovernmental agreements between Broomfield, Erie, and Thornton expanded the study to approximately 7,640 acres and its present "Sub-Area" configuration (Exhibit B).

In addition, to providing planning and engineering recommendations relative to the defined Sub-Area, the Plan also looks at surrounding jurisdictions to promote cohesive regional planning. In developing density and employee numbers calculations, for example, the regional

area considered totaled more than 13,000 acres within Broomfield, Erie, Lafayette, and Thornton.

For the other jurisdictions representations are for illustrative purposes only.

Summary of Approach:

Several factors were considered in developing this Plan. Goals established in the Broomfield Master Plan were key considerations toward providing a more detailed and complementary "next step," as were those identified through intergovernmental agreements with surrounding jurisdictions. Key issues identified and addressed include:

- Creating a transit/transportation center with associated transit-oriented development to support future growth and traffic demands in the northern "Gateway Area"
- Preserving and enhancing sensitive natural habitats and open lands, while providing opportunities for recreation uses
- Maintaining the residential integrity of existing neighborhoods through sensitive planning criteria and design standards
- Establishing efficient and well-organized road networks to enhance development opportunities and provide regional connectivity
- Integrating private development initiatives within the planning process, as appropriate, to create a cohesive vision for the Sub-Area.

By focusing on these goals and referring to other current planning documents pertaining to the study area (source documents listed below), the I-25 Sub-Area Plan has evolved, in fact, into a long-range "Vision Plan" for a significant multi-jurisdictional "Sub-Area." Key components to guide future development in this area include a Land Use Plan, Open Lands and Parks Plan, Transportation Plan, Transit Plan, and Conceptual Engineering for Infrastructure.

This study and its documentation have been organized within a traditional planning approach. Beginning with a site analysis, several natural and jurisdictional elements were collected, evaluated, and synthesized to identify development opportunities and constraints. By combining these findings with identified goals, conceptual land use plans and roadway layouts were developed for the study area. When preferred concept plans were selected, conceptual engineering for infrastructure was initiated in order to provide an Opinion of Probable Infrastructure Costs and to develop associated design standards. The included sections of this report document this planning approach for each of the key elements studied in preparing the I-25 Sub-Area Plan.

Source Documents:

The following source documents were used as the basis for developing the I-25 Sub-Area Land Use Plan and its respective engineering components:

1. City of Broomfield 1995 Master Plan
2. City of Broomfield 1996 Transportation Plan
3. City of Broomfield 1992 Wildlife and Open Space Study
4. City of Broomfield/Town of Erie 1998 Intergovernmental Agreement
5. City of Broomfield/City of Thornton 1998 Intergovernmental Agreement
6. City of Broomfield/City of Lafayette/Boulder County 1997 InterGovernmental Agreement
7. Adams County Transportation Plan
8. Adams County Comprehensive Plan
9. Boulder County Comprehensive Plan
10. DRCOG 2015 Interim Regional Transportation Plan
11. Town of Erie Comprehensive Plan
12. Tri-County Airport Master Plan
13. Town of Erie Treated Water Master Plan
14. City of Lafayette Comprehensive Plan
15. City of Thornton 1997 Comprehensive Plan
16. Weld County Comprehensive Plan
17. Other similar planning studies for private or public land, as provided



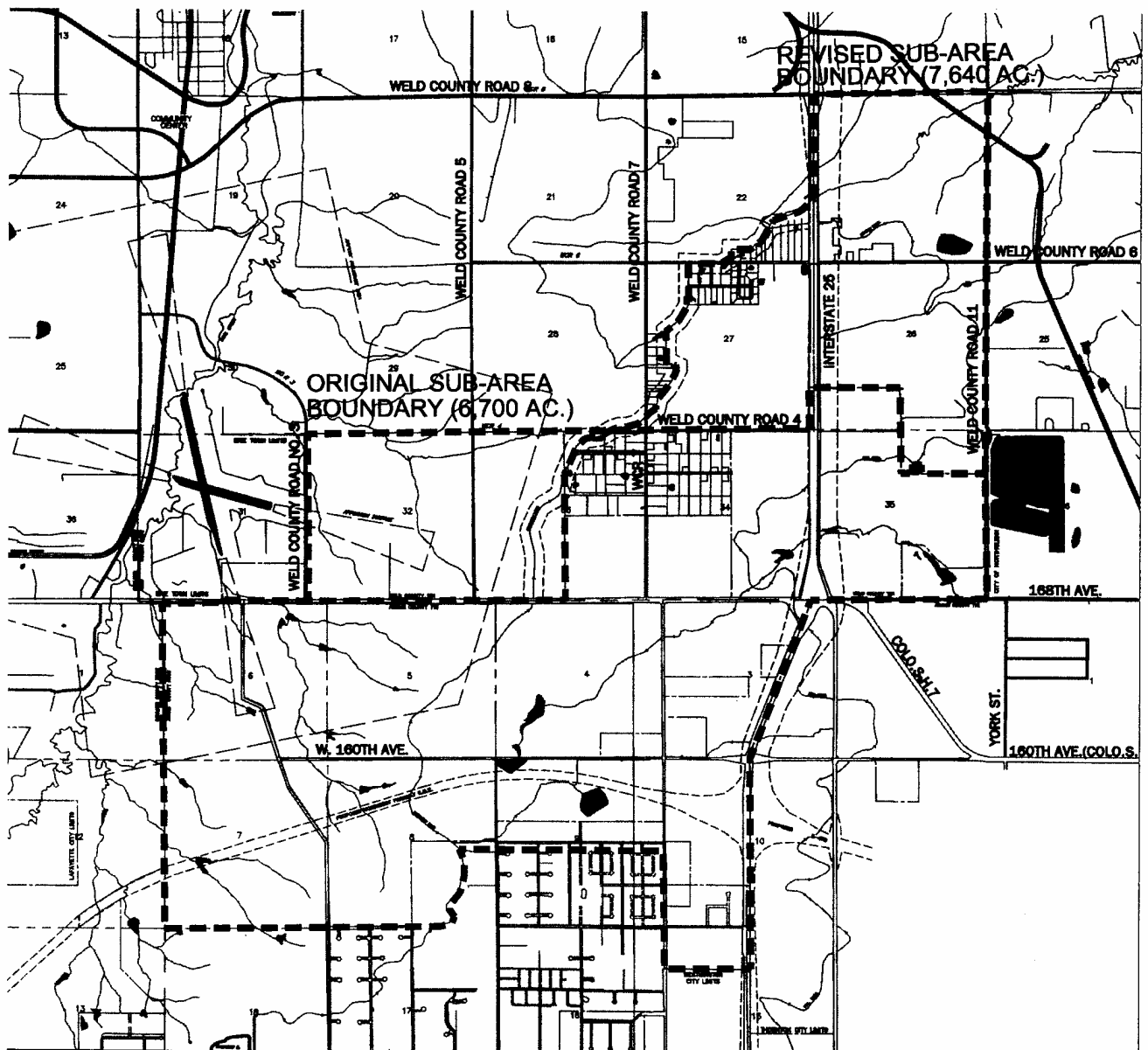
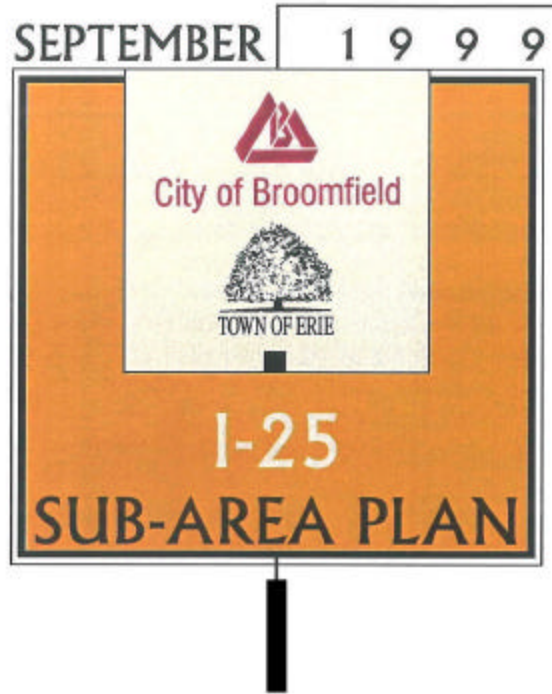


Exhibit B: Project Planning Area



SUB-AREA LAND USE PLAN

- Reference to Broomfield Master Plan
- Analysis Overlays
- Natural Opportunities and Constraints
- Jurisdictional Opportunities and Constraints
- Proposed Sub-Area Land Use Plan

Reference to Broomfield Master Plan:

The I-25 Sub-Area Plan continues the vision identified in the Broomfield Master Plan — to create a distinctive northern "Gateway" into the City. As a more detailed study of the Master Plan, the Sub-Area Plan addresses specific land uses and road configurations, including conceptual recommendations for mass transit. Key components of this Sub-Area Plan will result in refinements to the Master Plan.

Currently, the Master Plan shows a predominance of mixed-used commercial development, with employment and regional commercial uses along the I-25 corridor. Open space greenways buffer the northern edge of the City and provide linear connections through the heart of the Sub-Area. A Village Center is proposed along Zuni Street, north of Sheridan Boulevard.

The Master Plan identifies the I-25 Sub-Area as an employment district, with opportunity sites for research and development, manufacturing, and warehousing uses. It proposes a Mixed Use/Commercial District to serve the needs of the Greater North Denver Region, which has potential to become a major center for employment, commercial, and some residential uses. These uses may also be complemented by an additional transit facility at the I-25 - Highway 7 Interchange.

Areas to the north of Broomfield's planning boundaries have been included in the study based on intergovernmental agreements with Erie and Thornton. These agreements were important steps in insuring planning decisions made in the best interests of the region and the involved communities.

Analysis Overlays:

A key step in the planning process involved collecting and analyzing data to identify overall opportunities and constraints within the Sub-Area. These analyses considered both natural and jurisdictional elements to determine their impacts on future development.

Natural elements considered within this step included:

- Slope Analysis
- Subsidence Hazards
- Flood Plan and Hydrology
- Local Habitat/Vegetation Ratings

Jurisdictional elements considered included:

- Existing Transportation Plan
- Electric Distribution
- Water Distribution
- Oil and Gas Leases
- Sanitary Sewer Systems
- Residential and Community Services (i.e. fire station, churches, residential developments)
- Property Ownership
- Fire Districts
- Gas Distribution

The results of these individual analyses are included in the Technical Appendix of this document. Key aspects of the each analysis (natural and jurisdictional) were synthesized to create exhibits, identified herein as Natural Opportunities and Constraints and Jurisdictional Opportunities and Constraints (Exhibits C and D).

Natural Opportunities and Constraints:

Given the Sub-Area's rural, agricultural nature, existing conditions offer numerous opportunities to create land-sensitive development while preserving natural features. The area's topography may be categorized within two general regions: the eastern half consists of generally shallow grades of 0-5% slope; and toward the west, the land transitions to much steeper, rolling terrain with 10-15%+ slopes and numerous drainage divides interspersed in north-south directions. The steeper slopes offer opportunities to develop more diverse, smaller footprint buildings to enhance existing land forms (and reduce development costs). Toward the east, larger footprints can be developed more favorably, offering panoramic views of the Rocky Mountain backdrop.

Subsidence within the Sub-Area is generally nonexistent, except for one notable area of high subsidence along I-25 between Weld County Roads 4 and 6. As development is considered in this location, more detailed investigations should be completed to determine any specific site limitations.

The City of Broomfield Wildlife and Open Space Study identifies a range of habitat locations throughout the Sub-Area. A high quality "open water and wetland habitat" is designated in the Preble Creek Corridor. Remaining locations are not rated as favorably (moderate-to-low), however they do offer opportunities for improving habitats within the development process.

The Broomfield Master Plan supports the preservation and enhancement of natural open space, and this goal has served as a cornerstone in directing the Sub-Area Land Use planning effort. Hydrologically, the highest flood plain incidence occurs on the area's eastern edge, where slopes are shallowest. Preble Creek contains a narrow flood plain zone, continuing north across Baseline Road (SH7). Based on current information, none of the flood plains

identified appear to pose significant limitation to development along I-25.

Jurisdictional Opportunities and Constraints:

Due to the limited amount and density of current development within the Sub-Area, generally few associated utility services exist. With the exception of some gas main lines and electric service along 160th Street, utility services are very limited within the defined Sub-Area. This status information is extremely important relative to planning and conceptual engineering for new developments, and the impacts of realigning existing utilities or providing services to new users.

Electric service is typically provided overhead* but will be relocated underground eventually, as development occurs. Other utilities will require re-sizing to meet future development demands. A more detailed discussion of utility requirements is presented in the Conceptual Sub-Area Engineering for Infrastructure section of this document (*Section V*).

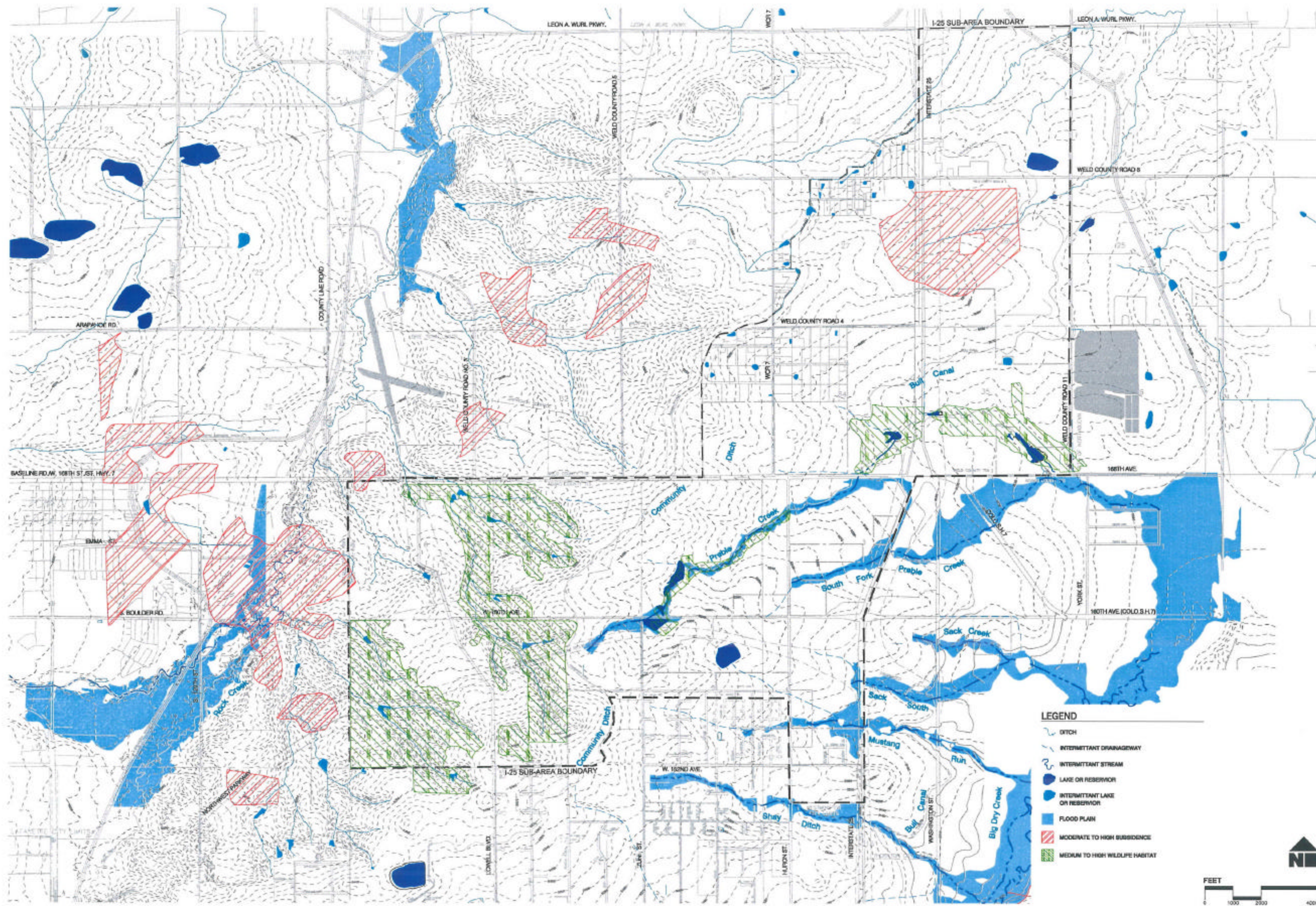


Exhibit C: Natural Opportunities and Constraints

Proposed Sub-Area Land Use Plan

Much of the property within the Sub-Area is rural. However, its prominent location along I-25 and the proposed Northwest Parkway, coupled with a planned northern extension of Sheridan Boulevard, offer excellent long-term development potential for the Sub-Area. For this reason, the Sub-Area Land Use Plan focuses on issues of land use compatibility, the impacts of land use on traffic patterns and infrastructure systems, access, and open lands and wildlife opportunities.

During the course of this study and land use planning, development initiatives have been proposed within the Sub-Area by private developers. These initiatives have thus been considered within the planning process to provide immediacy, consistency, and interconnection between each development proposal and the Sub-Area Plan being prepared.

Another important aspect of the Sub-Area Land Use Plan is the integration of natural and jurisdictional elements to create a cohesive "Community Vision" that continues the goals of the Broomfield Master Plan. Key elements include:

- Creating a well-developed transportation network to provide regional connectivity
- Providing a balance of land uses sensitive to the distribution of jobs and housing
- Establishing a well-developed open space system that preserves sensitive natural areas, while maximizing recreational opportunities.

Highlights of the Sub-Area Plan relative to land uses include:

- Establishing a transit center with adjacent transit-oriented development along the I-25 corridor, just south of Baseline Road (SH7) to support vehicular and non-vehicular access into and out of this core area
- Realigning Sheridan Boulevard to provide optimal development conditions throughout the Sub-Area, as well as regional connectivity to the Northwest Parkway

- Providing a variety of mixed, high-quality land uses, supported by existing and proposed regional transportation networks, to maximize economic opportunities throughout the Sub-Area
- Creating a contiguous system of open space, open lands, and parks throughout the Sub-Area, providing recreation opportunities and pedestrian-oriented circulation
- Providing an east-west roadway connection through the Sub-Area between Lafayette and Thornton, along 160th Street, by extending South Boulder Road across Coal Creek
- Realigning Lowell Boulevard, with a potential interchange at the Northwest Parkway, and extending it northward to reinforce a "Southern Gateway" into Erie
- Realigning Sheridan Boulevard as a major north-south link in Broomfield, and promoting regional connectivity between Broomfield and other jurisdictions
- Developing "transition zones" to buffer and/or reduce visual and other impacts between residential and non-residential uses
- Creating a hierarchy of land use types, beginning with high densities along the I-25 corridor and transitioning westerly to less dense uses.

The land use designations used on the accompanying Sub-Area Land Use Plan are consistent with those identified in the Broomfield Master Plan and are described below. These definitions may vary between jurisdiction.

- **Mixed-Use Commercial/Retail**

A major center for employment, commercial, and some residential uses to serve the needs of the greater north Denver region. The configuration of uses within this district shall encourage transit ridership, promote walking and hiking for mid-day trips, link with the city-wide greenway system, and allow those who

wish to live and work in the same neighborhood to do so. No more than 30% of the land area within the Mixed-Use Commercial/Retail District should be utilized for residential uses. Residential placed over retail should be considered a bonus in excess of this maximum.

- **Regional Commercial**

A wide variety of uses are permitted within areas designated for Regional Commercial, including a regional shopping center, discount/big box retailers, travel commercial uses (such as gas stations and motels), and auto-related uses.

- **Transit-Oriented Development**

These sites are appropriate locations for a mix of uses that cater to the needs of transit commuters, including moderate and high density residential, employment-generating uses, and convenience and specialty commercial. The design and orientation of new buildings should be pedestrian-oriented and special streetscape improvements should be considered to make rich and enjoyable public spaces.

- **Village Center**

Village Centers are appropriate locations for convenience-oriented retail uses, designed to serve the needs of several neighborhoods and provide a walking destination for nearby residents. Each center should be anchored by a grocery store(s) and accompanied by additional shops, such as a drug store, hardware store, video store, bank, restaurants, and other small ancillary service shops, civic uses and day care are also appropriate.

- **Employment**

Office, research and development, light industrial, warehousing, and some limited commercial uses should be targeted to areas designated "Employment."

Much of the area north of Baseline Road (SH7) is designated for employment uses. Over time, based on the absorption of land and future travel patterns, it may be prudent to allow uses in addition to those

included in this current definition. These additional uses will be evaluated based in their complementary nature to the employment base and their contribution to the lessening of vehicular traffic volumes.

- **Neighborhood Residential**

A mix of housing types will be encouraged in Neighborhood Residential areas to achieve an overall Average Density Target of 4 dwelling units/gross acre.

- **Rural Residential**

Rural Residential areas should include a mix of 2 to 10 acre lots with building sites clustered to maximize open space. The Land Use Plan also identifies areas where Rural Residential sites currently exist within the Sub-Area.

- **Transitional Residential**

Transitional Residential areas should contain 1 dwelling unit/ acre density lots intended to provide development transitions between Rural Residential and Non-Residential sites. In cases where this does not occur, provisions are made for Transition Zones requiring treatments such as access controls, architectural enhancements, and/or additional landscaping.

- **Open Lands**

Open Lands are those public and private lands acquired, or preserved, in the public interest to: provide for the conservation and protection of natural resources, physical and aesthetic enjoyment of the out-of-doors, recreational opportunities, shape the pattern of growth and development, preserve agricultural resources, and protect prominent geographical features and cultural resources. Additional lands to those designated on the land use map will likely be acquired in the area for open space and park and recreation purposes. These additional lands will be identified in the future in a comprehensive fashion prior to development activity in anticipation of future needs. Acquisition may then be coordinated to expand the interconnected system of open lands.

- **Regional Park**

This use identified in the southwest quadrant of the Sub-Area, is intended to provide an active recreation site to residential neighborhoods. This area is the most intensively used and developed type of Open Lands within the City. Regional Parks offer a broad range of recreational and cultural uses.

The following Table illustrates generally accepted uses within each land use category:

This proposed Sub-Area Land Use Plan (Exhibit E) can be used immediately by Broomfield to assess development proposals in the defined Sub-Area relative to City goals and desired community vision. All avenues of public/private funding, cost-sharing reimbursement programs, and related incentives to work together toward these goals and vision should be pursued.

MASTER PLAN DESIGNATION	MIXED-USE /COMMERCIAL	REGIONAL COMMERCIAL	TRANSIT ORIENTED DEVELOPMENT	VILLAGE CENTER	EMPLOYMENT	NEIGHBORHOOD RESIDENTIAL	RURAL RESIDENTIAL	TRANSITIONAL RESIDENTIAL
USE								
Public Uses ¹	x		x	x	x	x		
Religious Uses ²	x		x	x	x			x
Childcare ³	x	x	x	x	x			
Lodging ⁴			x	x				
Hotel/Motel	x	x	x		x			
Medical and Dental	x	x	x	x	x			
Medical Research and development	x				x			
Business/Office ⁵	x	x	x	x	x			
Business Services ⁶	x	x	x	x	x			
Heavy Equipment Sales & Retail					x			
Manuf. & Assembly ⁷	x				x			
Manuf. & Assembly ⁸					x			
Warehousing/Retail	x	x						
Warehousing/Employment					x			
Self-Storage	x				x			
Automotive ⁹	x	accessory	limited	limited	limited			
Town Retail ¹⁰	x	x	x	x				
Regional Retail	x	x						
Full Service Grocery	x	x		x				
Neighborhood Retail ¹¹	x	x	x	x	x			
Restaurants and Cafes ¹²	x	x	x	x	x			
Restaurants and Cafes ¹³	x	x	x	x	x			
Nightclubs and Bars ¹⁴	x	x	x		x			
Theaters, Cinemas, and Auditoriums	x	x	x		x			
Physical Fitness ¹⁵	x	x	x	x	x			
Personal Services ¹⁶	x	x	x	x	x			
Estate Residential						x	x	x
Single-Family Standard Lot						x	x	x ¹⁷
Single-Family Small Lot	x		x	x		x		
Townhouse	x		x	x		x		
Duplex	x		x	x		x		
Four-plex	x		x	x				
Multi-Family Buildings with over 4 units per building	x		x	x				
Multi-Family over Groundfloor Retail	x		x	x		x	x	

¹Including but not limited to: libraries, postal, police and fire substations, community centers ²Including churches, synagogues, mosques

³Including daycare, pre-school, nursery school ⁴Including small inn, bed and breakfast or other small scale overnight accommodations ⁵Including

but not limited to: banks and financial institutions, corporate, professional and governmental and other offices ⁶Including but not limited to: office supplies, photocopy shops, print shops, insurance, real estate and travel agencies ⁷Including only those that do not generate objectionable

noise, smoke, odor, dust, vibration, etc. ⁸Including those that do generate objectionable noise, smoke, odor, dust, vibration, etc. ⁹Including as

uses by special review, gas stations, towing, repair ¹⁰Including but not limited to: books, cameras, clothes, home furnishings, small appliances,

sporting goods and toys. To include a mix of user size, large and small ¹¹Including but not limited to: convenience stores, neighborhood markets,

specialty foods, bakeries, florists, cafes, video rentals mail/photocopy/office services - in Neighborhood Centers, no single store shall be more

than 10,000 s.f. in size ¹²Not serving alcoholic beverages ¹³Serving alcoholic beverages, subordinate to food ¹⁴Sale and consumption of liquor is

the primary activity, oftentimes includes live entertainment after 5:00 p.m., use approval required ¹⁵Including health clubs, gyms, dance studios

¹⁶Including but not limited to: hair and nail salons, tailoring, shoe repair, dry cleaners, laundromats ¹⁷Clustered.

Exhibit F shows regional land use designations outside of the Sub-Area boundary and are for illustrative purposes only.

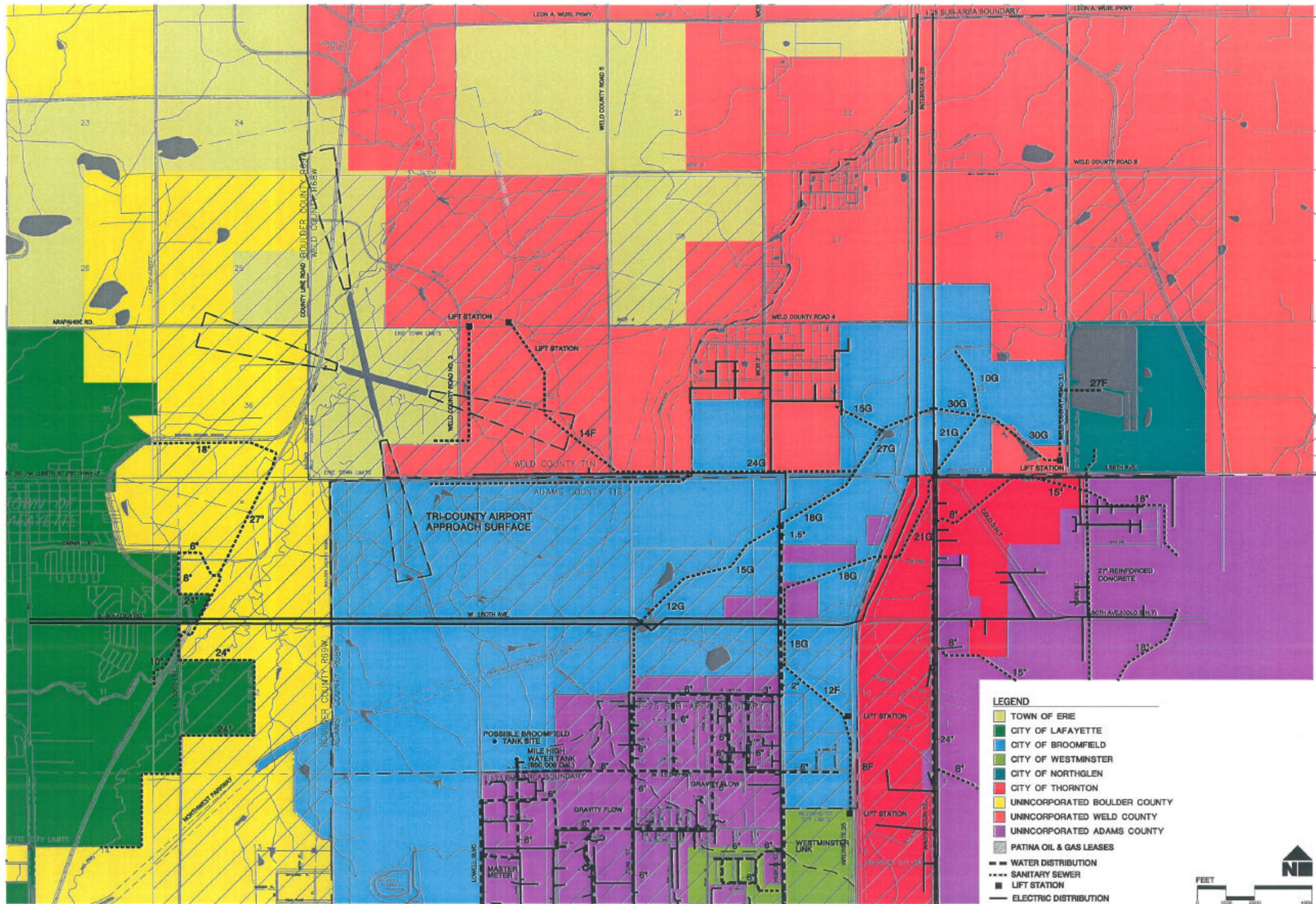
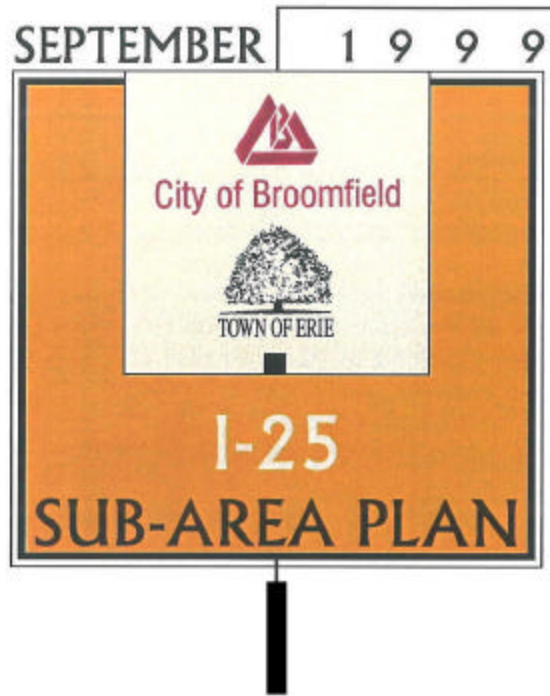


Exhibit D: Jurisdictional Opportunities and Constraints







SUB-AREA OPEN LANDS AND PARKS PLAN

- Study Overview
- Reference to Broomfield Master Plan
- Proposed Sub-Area Open Lands and Parks Plan

Study Overview:

Several key issues were discussed in the "Summary of Approach" in the Introduction (*Section I*) of this document, including "preserving and enhancing sensitive natural habitats and open lands..." Such preservation and enhancement were also key factors in identifying development opportunities and constraints within the Sub-Area.

This Sub-Area Open Lands and Parks Plan

integrates the City's Master Plan with its Wildlife and Open Space Study identification of habitat types within the Sub-Area — and with the Sub-Area study's detailed analysis of these natural opportunities and constraints. The result is a tapestry of greenways that preserve sensitive habitats from development; protect and enhance open lands in development areas; and provide ample opportunities for parks and recreation.

The following categories and uses are identifiable

within these greenways:

Open Lands

Open Space and Park and Recreation uses within the Broomfield Master Plan are categorized under the general heading "Open Lands." Within the Sub-Area Plan, however, Open Lands are identified in habitat corridors along the Northwest Parkway and in natural drainage areas with the intention of preserving the native landscape and promoting development sensitivity around these areas. These designations are not intended to be interpreted as residual land with limited development potential but rather, as unique ecosystems affording special opportunities for development that incorporates pedestrian systems, enhanced views, and co-existing wildlife habitats.

Designated park and recreation uses in the Sub-Area Plan indicate areas where active recreation may occur. These areas are likely to be developed for active recreation facilities and used intensively.

These two types of Open Lands are integrated within a greenway system, providing a network of natural spines linked with an extensive trail system throughout the Sub-Area and adjacent region.

Sensitive Habitats

Sensitive Habitats are defined as an "overlay" to the Open Lands category to set apart wildlife habitat areas that are to remain "untouched" within the Sub-Area. The Preble Creek Corridor was highly rated as a wildlife habitat in the Wildlife and Open Space Study, and great care was taken in the Sub-Area planning process to preserve this area. Similarly, other zones not as highly rated, are identified for their potential for enhancement. The Sub-Area Land and Parks Plan identifies these opportunities to encourage the addition of valuable natural features that promote higher wildlife value and quality of life opportunities.

Transition Zones

Transition zones are designated to protect existing residential areas from the encroachment

of non-residential uses, and upgraded roads from existing rural standards. Specific guidelines regarding development within these zones are identified in the Sub-Area Plan Design Standards (*Section VI*) of this document.

Generally, development requirements within transition zones include increased use of plant materials, and berms and fences within widened setbacks to reduce noise and visual impacts. Architecture for buildings and accessory structures within the zones generally requires special design treatments relative to visual compatibility.

The Sub-Area Land Use Plan also identifies a Transitional Residential use, designed to minimize areas where residential and non-residential uses border one another.

Broomfield Master Plan:

The Broomfield Master Plan identifies "open lands" as a major goal and dedicates extensive land for parks, greenways, and riparian corridors in future development areas. In response to this concern, a series of open land and park corridors were developed in conjunction with the Sub-Area Land Use Plan. These corridors provide pedestrian connectivity throughout the Sub-Area and surrounding region, and identified trails within Broomfield are continued into the area through these corridors.

The goal of the Land Use Plan, however, is to provide a balance between recreational needs and preserving sustainable habitats. Planning during development must be prioritized to maintain this balance. Additionally, individual developments within the Sub-Area will be required to provide linkages from their open space areas to the overall open space and trail system.

Projected development densities within the Sub-Area will have a definite impact on existing wildlife habitats. To help preserve habitats, the Land Use Plan incorporates wide corridors of open lands that take advantage of natural features such as drainageways. And many areas regarded as having low value currently relative to habitats will have the opportunity to be enhanced

for wildlife during development. These open land areas will also preserve view corridors and provide visual buffers from some existing residential neighborhoods that border the Sub-Area.

Open Lands and Parks Plan:

The distinctive natural characteristics of the Sub-Area, including extensive rolling terrain and many creek and wetland sites, offer numerous opportunities to create an amenity-rich environment for development. In areas where topography is more undulating, there are opportunities to integrate development sensitively into the site context.

With these opportunities in mind, the Open Lands and Parks Plan (Exhibit G) identified the following goals:

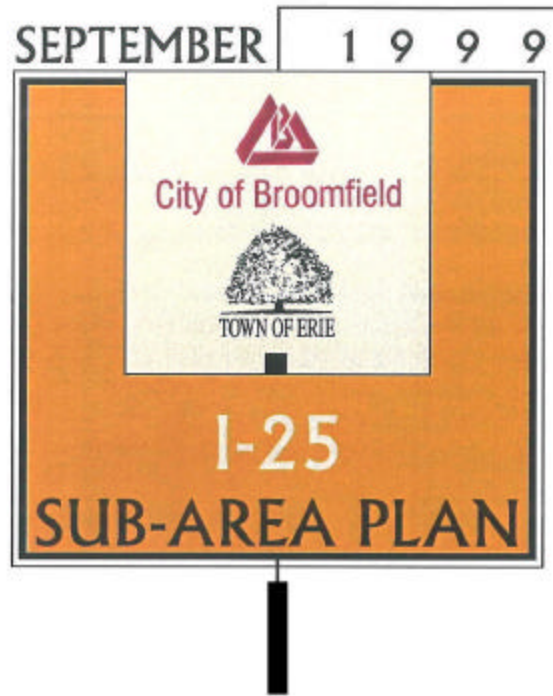
- Identify opportunities for the creation and/or preservation of open land areas that help preserve sensitive habitats, provide visual and noise buffers between non-compatible uses, and allow for regional open space connectivity throughout the Sub-Area and beyond

- Establish regional park locations to support the needs of the Sub-Area and the greater Broomfield Community
- Establish a regional trail system that connects to existing and proposed trails, and makes provisions for connecting to future development circulation systems.

Highlights of the proposed Sub-Area Open Lands and Parks Plan include:

- Establishes a regional park system surrounding the core residential area west of Sheridan Boulevard
- Utilizes the Open Lands designation to soften the urban edge along the Northwest Parkway and provide connectivity throughout the Sub-Area
- Retains and enhances the Preble Creek Corridor as a stable habitat zone with the same consideration given to other lesser quality habitats on the western edge of the Sub-Area.





IV

SUB-AREA TRANSPORTATION PLAN

- Study Overview
- Travel Demand
- Existing and Proposed Roadway System
- Conceptual Transit Plan
- Conceptual Engineering for Roadways

Overview:

The Sub-Area Transportation Plan provides forecasts of travel demand associated with 2020 development levels of the Sub-Area Land Use Plan, including automobile travel and bicycle/pedestrian circulation, and proposes a Conceptual Roadway System that will accommodate that demand. An included Conceptual Transit Plan encourages and accommodates Sub-Area transit demand.

Travel Demand:

The basis for travel demand forecasts for the Sub-Area are household and employment forecasts for each of 30 Transportation Analysis Zones (TAZ) (Exhibit H) within the planning area. Each TAZ is depicted on Exhibit H. It should be noted that in two instances (TAZ 380 and 363), zones are in Thornton, and include hypothetical land uses for planning purposes. Several other TAZ locations include areas both within and outside the defined Sub-Area.

Exhibit H shows the numbers of households and employees forecast within each TAZ at projected build-out of the Sub-Area Land Use Plan. The planning area totals include more than 5,700 households and 135,000 employees. Projected employment levels makes this planning area one of the major employment centers in the region.

Exhibit H also shows the number of vehicle trips estimated to be generated by this Land Use scenario, based on trip generation rates developed by the Denver Regional Council of Governments (DRCOG). The 2020 forecast is 1,174,000 vehicle trips per day, of which approximately 1 million would be generated by land uses within the Sub-Area. These trip-generation forecasts are also illustrated by TAZ in Exhibit H. This Exhibit shows that high vehicular trip generation levels are forecast throughout the study area, with the exception of the low-to-moderate density residential zones south of the planned Northwest Parkway.

The "Simplified Regional Forecasting Model" developed by DRCOG was used to estimate the distribution of trips within the Sub-Area, and Exhibit H shows that forecast. Forty-two percent

(42%) of vehicle trips — the largest portion — are projected to take place within the Sub-Area. This high proportion of internal trips reflects the proposed mix of residential development and various types of employment within the Sub-Area Land Use Plan.

Estimates also project the proportions of external trips to and from the Sub-Area relative to four quadrants of the Denver Metropolitan Area. I-25 and 120th Avenue were used to establish the quadrants. Fifty-eight percent of trips forecast to leave or enter the sub-area are divided relatively evenly among the four quadrants, with 12%-to-17% represented in each quadrant. This projected distribution demonstrates the need for multiple access routes into and out of the Sub-Area as shown on Exhibit I.

Existing And Proposed Roadway System:

Existing Roadway Network

The Sub-Area is currently served by two principal roadways: I-25 and Baseline Road (SH7). I-25 is the primary north-south access, connecting the Sub-Area with Denver and the Southern Metro Area to the south, and with a number of Front Range communities to the north. I-25 is a 6-lane freeway south of Baseline Road (SH7), and a 4-lane facility north of Baseline Road (SH7). I-25 interchanges serving the Sub-Area are widely spaced, and include interchanges at Baseline Road (SH7); three miles north of Baseline Road (SH7) at Weld County Road 8; and at 120th Avenue, 6 miles south of Baseline Road (SH7). Baseline Road (SH7) is currently the principal east-west route serving regional traffic through the Sub-Area. It is a 2-lane highway with continuity to Brighton to the east, and Boulder to the west.

A network of rural, two-lane, section-line roads also exists. These roads generally do not have continuity as paved roads through the Sub-Area.

Proposed Roadway System

The proposed system consists of four roadway classifications, defined according to function, capacity, and type of access:

- **Freeways** — Freeways provide for interstate and major regional movements with four or more through-lanes designed for vehicles moving at high speeds. Access is limited to widely-spaced, grade-separated interchanges.
- **Principal Arterials** — Principal arterial streets provide important mobility routes, with continuity over long distances. Access is typically provided at traffic signals, and carefully controlled to maintain the high mobility function. Principal arterials are typically comprised of four or more through-lanes, with added turn lanes at intersections.
- **Minor Arterials** — Minor arterial streets also perform mobility functions, but typically serve less of a regional function and provide less continuity than principal arterials. Minor arterials frequently form boundaries for neighborhoods and developments, and provide access for abutting developments.
- **Major Connectors** — Major connectors are the primary streets within and between development areas. They connect and distribute traffic from local streets and individual developments to the arterial system.

A network of minor connectors and local streets will also be constructed to serve specific land uses as individual parcels are developed.

Exhibit K illustrates the Proposed Roadway System. I-25 will remain as the primary regional north-south connection; and extensions and upgrades to Sheridan Boulevard, Lowell Boulevard, and Huron Street on the west, and Washington Street and York Street to the east, are proposed to provide additional principal north-south routes.

The proposed Northwest Parkway will join with E-470's final segment, east of I-25, to form a new primary east-west route through the southern part of the Sub-Area. Extensions and upgrades to 160th Avenue, Baseline Road (SH7), Weld County Road 4, Weld County Road 6, and Weld

County Road 8 are proposed as additional principal east-west routes.

Using the forecast Sub-Area build-out, and the regional Year 2020 travel demand forecasting model, daily traffic volumes are forecast on this proposed roadway system on Exhibit L. Projected volumes at build-out on I-25 approach 200,000 vehicles per day, which is comparable to current traffic volumes on I-25 through much of the City and County of Denver. Particularly high traffic levels are projected on the arterial street system in 2020, with 50,000 vehicles per day for segments of Baseline Road (SH7), 160th, Weld County Road 8, Sheridan Boulevard, Lowell Boulevard, Huron Street, and Washington Street.

Using typical planning-level capacities for freeways and arterial roadways, the numbers of through-lanes needed on the major roadway network at Sub-Area build-out are projected in Exhibit I. Planning level capacities used are: 20,000-to-25,000 vehicles per day, per lane for freeways; 8,000-to-10,000 per day, per lane for principal arterials; and 6,000-to-8,000 per day, per lane for minor arterials and connectors. Exhibit I shows the 2020 traffic forecast. These estimates are based on 25% non-employment and 75% residential development. Exhibit J shows the buildout forecast.

Brief descriptions of the functions and proposed improvements and expansions of recommended roadway types within the roadway system include the following:

- **I-25** — A freeway-to-freeway interchange is planned at I-25/Northwest Parkway/E-470. A new interchange is proposed at the extension of Sheridan Boulevard, approximately midway between the existing interchanges at Baseline Road (SH7) and Weld County Road 8. Interchanges are also planned by Broomfield, Thornton, and Westminster at 144th Street and 136th Avenue, south of the Sub-Area. I-25 will need to be widened from its existing 4 and 6 lanes to 6 and 8 lanes to accommodate regional buildout.

- Northwest Parkway — The Northwest Parkway is being planned as a toll facility, and will extend from the planned final phase of E-470, east of I-25, to connect with the existing US 36/96th Street interchange. Thus, the Northwest Parkway will provide a key connection for the Sub-Area to the core of Broomfield, Thornton, and with other East and West Metro communities. It is being planned as 4-lane parkway, with grade-separated interchange access in the vicinity of the Sub-Area, and at-grade intersections and grade-separated interchanges to the west.

Since highway operational considerations call for a minimum of approximately 1.5 miles between freeway-to-freeway interchanges and adjacent interchanges, the first Northwest Parkway interchange west of I-25 is planned for the extension of Sheridan Boulevard, curving to an alignment approximately 1.5 miles west of I-25.

- Sheridan Boulevard — A Sheridan Boulevard extension is planned from south of the Sub-Area, through its employment centers, in a northeasterly direction. It will interchange with the Northwest Parkway and with I-25 between Weld County Road 4 and Weld County Road 6. East of I-25, it will connect with Weld County Road 6, providing a continuous route through southwestern Weld County to US 85. At Sub-Area buildout, Sheridan Boulevard is forecast to carry more than 50,000 vehicles per day on some segments, necessitating a six-through-lane cross-section.
- Lowell Boulevard — Lowell Boulevard is also planned as a principal north-south arterial, extending from south of the Sub-Area, in a northwesterly direction, to connect with the Weld County Road 1 (County Line Road) alignment into Erie. Lowell Boulevard will be the primary north-south route serving the employment and residential developments planned for the western part of the Sub-Area north of

the Northwest Parkway. It is recommended to have six through-lanes north of its intersection with Sheridan Boulevard, with a Northwest Parkway interchange, south of Sheridan Boulevard, Lowell will remain as a two-lane minor arterial.

- Huron Street (Weld County Road 7) — Huron Street is planned as a principal arterial through the Broomfield portion of the Sub-Area, connecting with Weld County Road 7 into Erie. It will have a grade-separated crossing of Northwest Parkway, and will swing one-half mile west of alignment between Baseline Road (SH7) and Weld County Road 6, to serve employment and commercial development while minimizing impacts to existing and planned lower density residential development.
- Washington Street (Weld County Road 9) — While the specific characteristics of Washington Street through the City of Thornton will be defined by that City's thoroughfare planning, it is recommended that it extend north through the Sub-Area, connecting with a north-south arterial street midway between I-25 and Weld County Road 11. This roadway will provide access to development in the eastern part of the Sub-Area, and provide a parallel frontage road east of I-25.
- Baseline Road (SH7) — It is recommended that this remain at its existing alignment in order to continue to serve a regional east-west connection between Boulder and Brighton, and as a principal east-west spine through the center of the Sub-Area. Sub-Area land uses and regional demand will necessitate a six-through-lane facility, with effective access control through the area.
- 160th Avenue — 160th Avenue is planned as a continuous principal arterial, extending from South Boulder Road, through Lafayette and the Sub-Area, and connecting with Baseline Road (SH7) east of I-25.

- Weld County Road 4 and Weld County Road 5 — Weld County Roads 4 and 5 are planned to form an L-shaped arterial connection between Weld County Road 5 in Erie to the north, and Weld County Road 4, across I-25, through a planned employment district of the Sub-Area.
- Weld County Road 6 — Weld County Road 6, from the east, will curve one-half mile to the south as a principal arterial, and meet the extension of Sheridan Boulevard at its proposed interchange with I-25. A Weld County Road 6 minor arterial roadway will "T" into the principal alignment, extending under I-25 to Weld County Road 5.
- Weld County Road 8 — Sub-Area buildout levels in conjunction with Erie's projected growth will require a six-lane arterial segment of Weld County Road 8, east of I-25. Erie's Transportation Plan calls for the extension of Weld County Road 8, connecting with Isabelle Road, as a four-lane roadway.

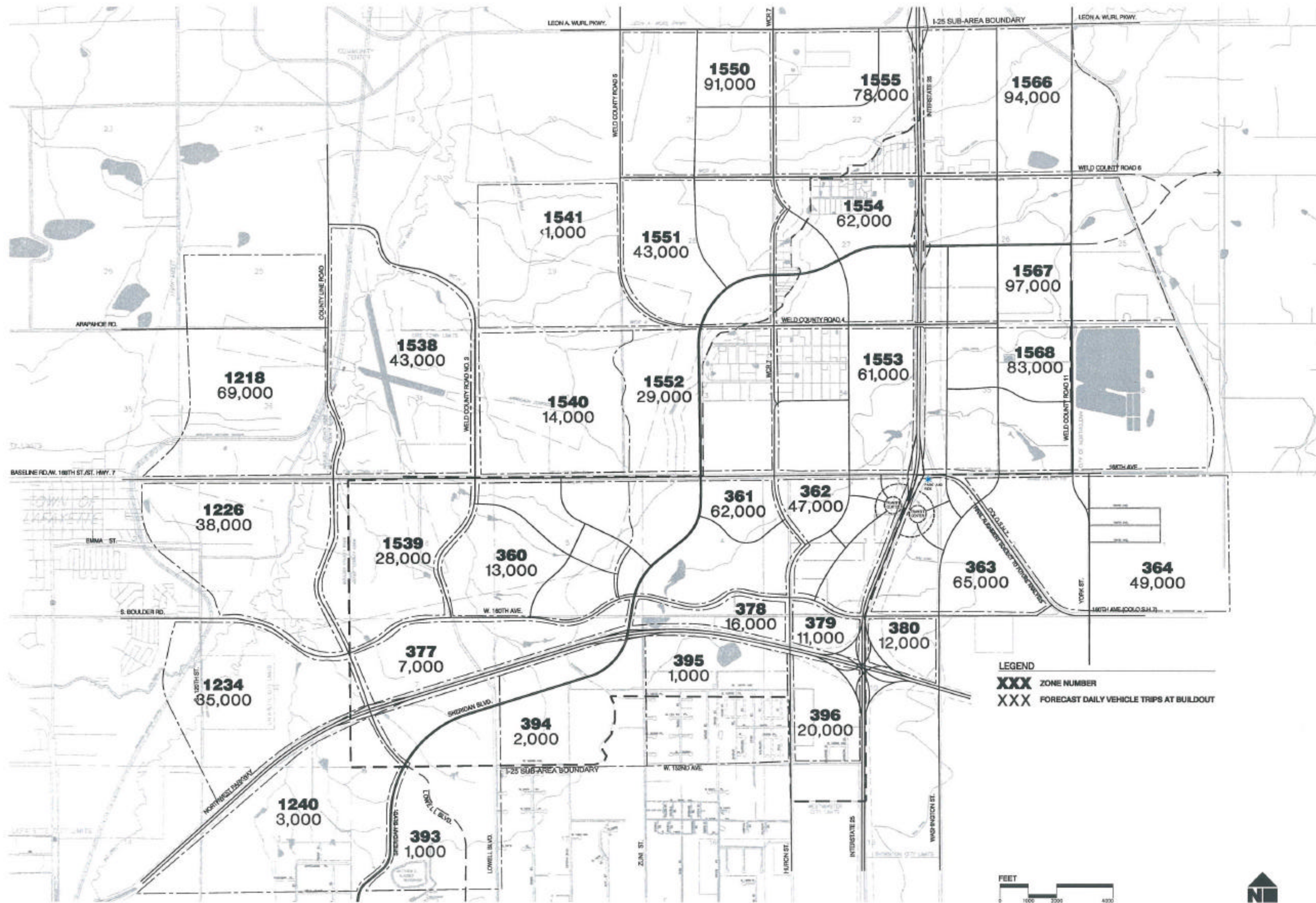


Exhibit H: Transportation Analysis Zones

Conceptual Engineering for Roadways:

The Roadway Master Plan (Exhibit M) illustrates the proposed roadway system for the Sub-Area based on vehicular circulation and transportation patterns recommended in the Transportation Plan. The foundation for the Master Plan is optimum utilization of existing principal arterials Baseline Road (SH7) and I-25; incorporation of the planned Northwest Parkway; and realignment of Sheridan Boulevard. It is intended that the roadway system will be built out on an incremental basis in response to capacity needs.

Based on projected traffic counts, Baseline Road (SH7) and Sheridan Boulevard are designed as 6-lane, principal arterials. A network of such arterials will provide optimum traffic circulation throughout the Sub-Area. This proposed 6-lane arterials network at buildout is comprised of:

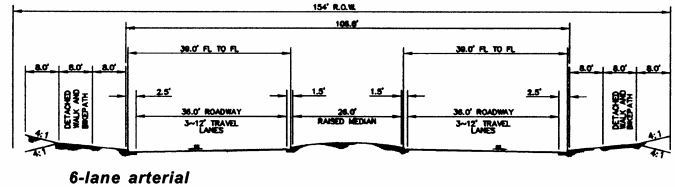
- Sheridan Boulevard
- Baseline Road (SH7)
- Lowell Boulevard (extended north and west of Sheridan Boulevard)
- Huron Street (realigned a half-mile east as it approaches and crosses Baseline Road)
- 160th Avenue (realigned throughout the Sub-Area)

The 6-lane principal arterial is designed to carry traffic volumes in excess of 32,000 daily trips. The road right-of-way ranges from 144 feet to 154 feet, depending on landscaped center median width.

The 6-lane principal arterial section includes:

- Three 12-foot travel lanes in each direction
- A 16-foot to 26-foot wide center landscaped median (26-foot wide at major intersection approaches will accommodate double left-turn lanes)
- An 18-foot wide landscaped area between roadway and walkway on both sides
- An 8-foot pedestrian/bike path on both sides — on-street bike lanes are not provided on these high-traffic arterial roadways

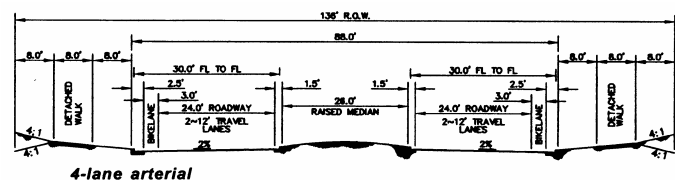
- An 8-foot wide landscaped area/utility corridor between back of walk and right-of-way on both sides.



The 4-lane arterial will accommodate lower traffic volumes, generally below 32,000 daily trips, within a total right-of-way width of 126 to 136 feet, depending on median width.

The 4-lane arterial section includes:

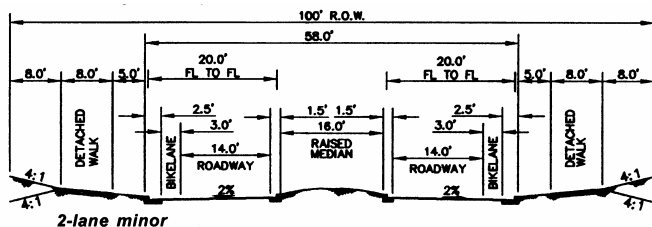
- Two 12-foot travel lanes in each direction
- Landscaped median varying in width from 16 feet through normal roadway lengths to 26 feet where roadways approach major intersections
- Right-turn lanes may be added to major intersections if needed
- 5-foot wide on-street bike lane on both sides
- An 8-foot wide landscaped area between roadway and walkway on both sides
- An 8-foot wide pedestrian walkway on both sides.
- An 8-foot wide landscaped area/utility corridor between back of walk and right-of-way on both sides.



The 2-lane minor arterial will accommodate traffic volumes from 12,000 to 16,000 daily trips within a total right-of-way width of 100 feet.

The 2-lane minor arterial roadway section consists of:

- One 14-foot wide travel lane in each direction
- A landscaped median, allowing a single left-turn lane at intersections
- A 5-foot wide on-street bike lane on each side
- A 5-foot wide landscaped area between curb and detached walk
- An 8-foot wide pedestrian walkway on each side
- An 8-foot wide landscaped area/utility corridor between back of walk and right-of-way on both sides.

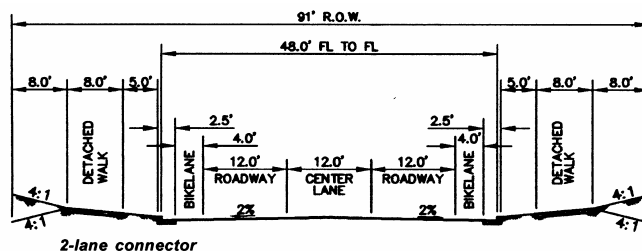


The 2-lane connector street will provide similar carrying capacity of 12,000 to 16,000 daily trips as the 2-lane minor arterial. The right-of-way required is 91 feet.

The 2-lane connector street section includes:

- One 12-foot wide travel lane in each direction
- A 12-foot wide painted center left-turn lane. The painted median allows more access than the raised center median
- A 6-foot wide on-street bike lane on each side

- A 5-foot wide landscaped area between curb and detached walk
- An 8-foot wide pedestrian walkway on each side
- An 8-foot wide landscaped area/utility corridor between back of walk and right-of-way on both sides.



Other key components of the Roadway Master Plan include:

- Sheridan Boulevard-Northwest Parkway Interchange, Lowell Boulevard-Northwest Parkway Overpass, and Huron Street Overpass are scheduled structures components of the Northwest Parkway.
- CDOT is not planning improvements of the Baseline/Brighton Interchange within the I-25 improvements program that includes this interchange. The interchange will need to be widened and improved, however, to accommodate the 6-lane principal arterial section proposed within the I-25 Sub-Area.
- The Sub-Area Transportation Plan recommends extending Weld County Road No. 4 eastward, across I-25, at the north edge of the Sub-Area boundary. This extension will require a 4-lane overpass over I-25.

Pedestrian and Bicycle Circulation

The Sub-Area Land Use Plan incorporates a network of off-street trails, and several trail crossings of both I-25 and the Northwest Parkway. These trail connections across freeway corridors are particularly important in providing an effective bicycle and pedestrian circulation

system that does not rely solely on busy arterial roadways with freeway interchanges. All typical arterial and major collector roadway sections include on-street bicycle lanes and detached sidewalks.

Transit System:

Two planning studies are being conducted currently to evaluate potential north-south regional transportation improvements through and near the Sub-Area. The North Front Range Transportation Alternatives Feasibility Study is being conducted jointly by CDOT, Denver, and North and Upper Front Range regional planning organizations to evaluate potential improvements between Denver and Fort Collins.

Alternatives being evaluated include I-25 and US 287 highway improvements; regional bus service along the US 287, I-25 and US 85 corridors; high occupancy vehicle(HOV)/bus lanes along I-25; and passenger rail routes along I-25 and the Union Pacific railroad corridor east of the Sub-Area.

Another major study is being conducted by the Regional Transportation District (RTD), to evaluate potential improvements in and around the I-25 corridor, between Denver and Baseline Road (SH7). Alternatives being evaluated include highway improvements; HOV/bus lanes; and rail transit, including light rail.

The outcomes of these studies, and future implementation of regional transit, will help shape the transit system serving the Sub-Area. Rail or bus transit, either between Denver and the Sub-Area, or between Denver and Fort Collins through the Sub-Area, will be compatible with a major Sub-Area transit center that will straddle I-25, south of Baseline Road (SH7). Exhibit N shows a conceptual diagram for a multi-modal transit/ transportation system within the Sub-Area intended to tie into the regional network.

The potential routes depicted serve local and subregional transit needs for the area. Additionally, the TOD designated adjacent to the transit center will provide residential and employment opportunities within convenient walking distance to major transit corridors.

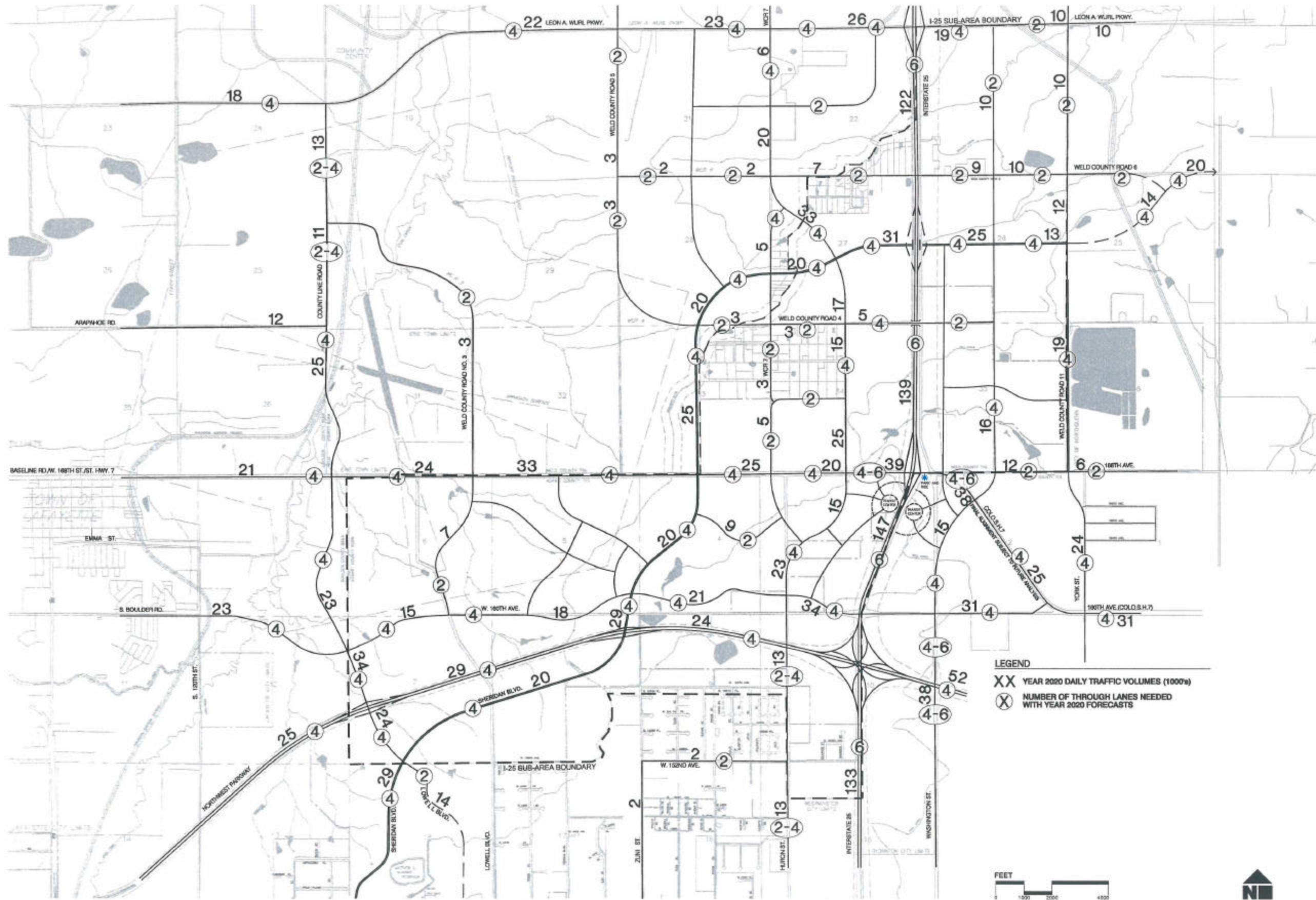


Exhibit I: Buildout Traffic Forecast for 2020



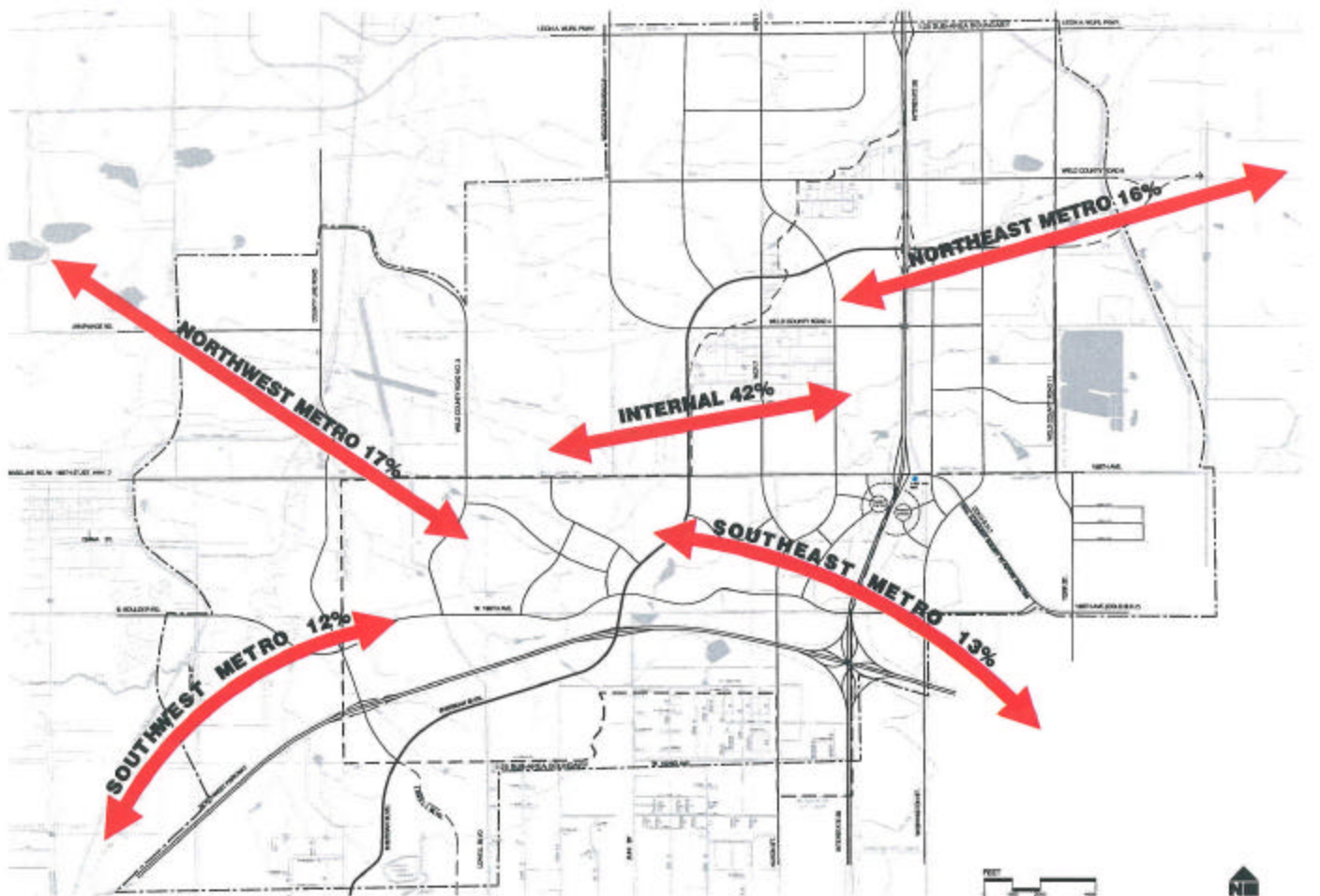


Exhibit K: Regional Roadway System

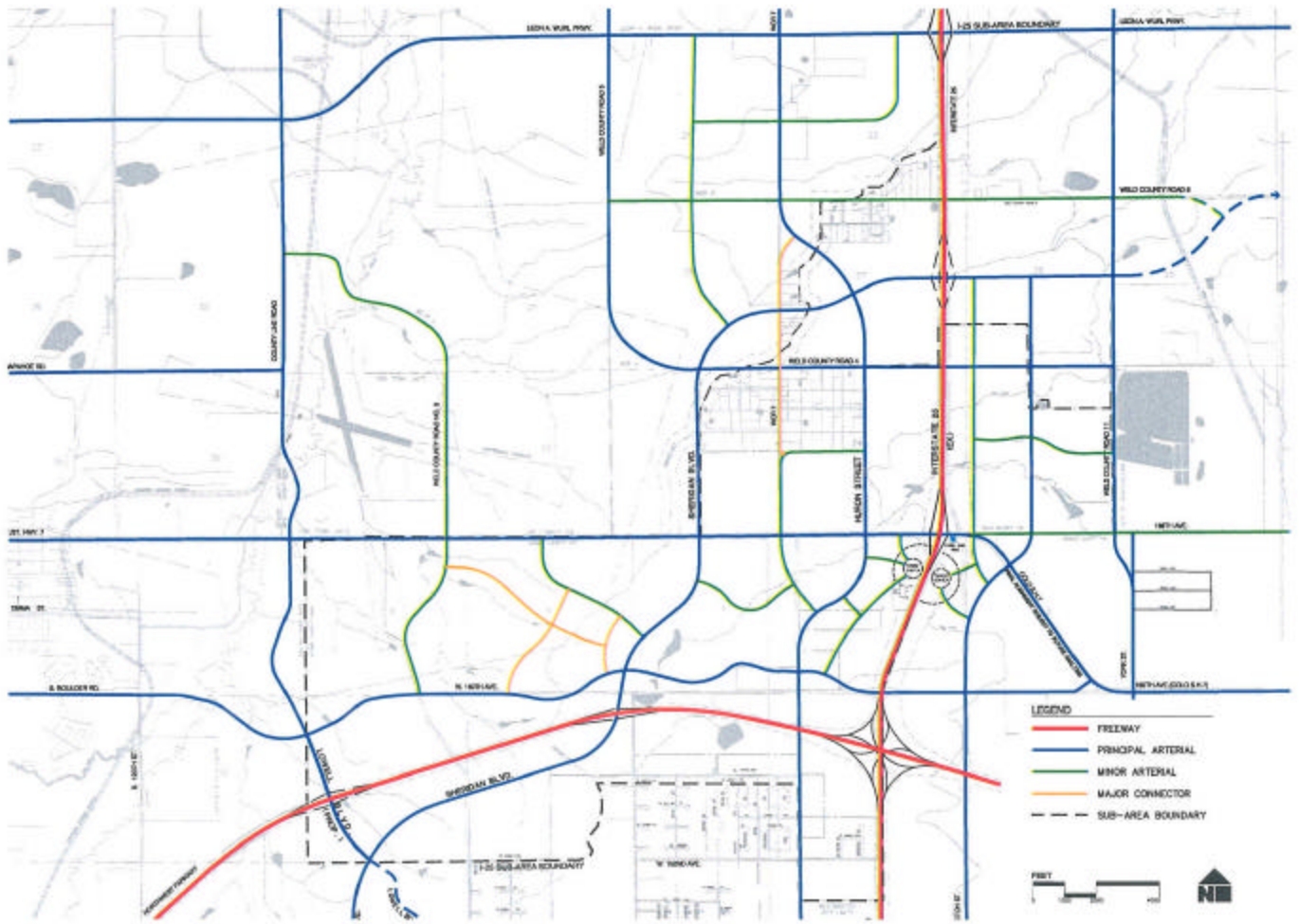


Exhibit L: Directional Distribution of Trips

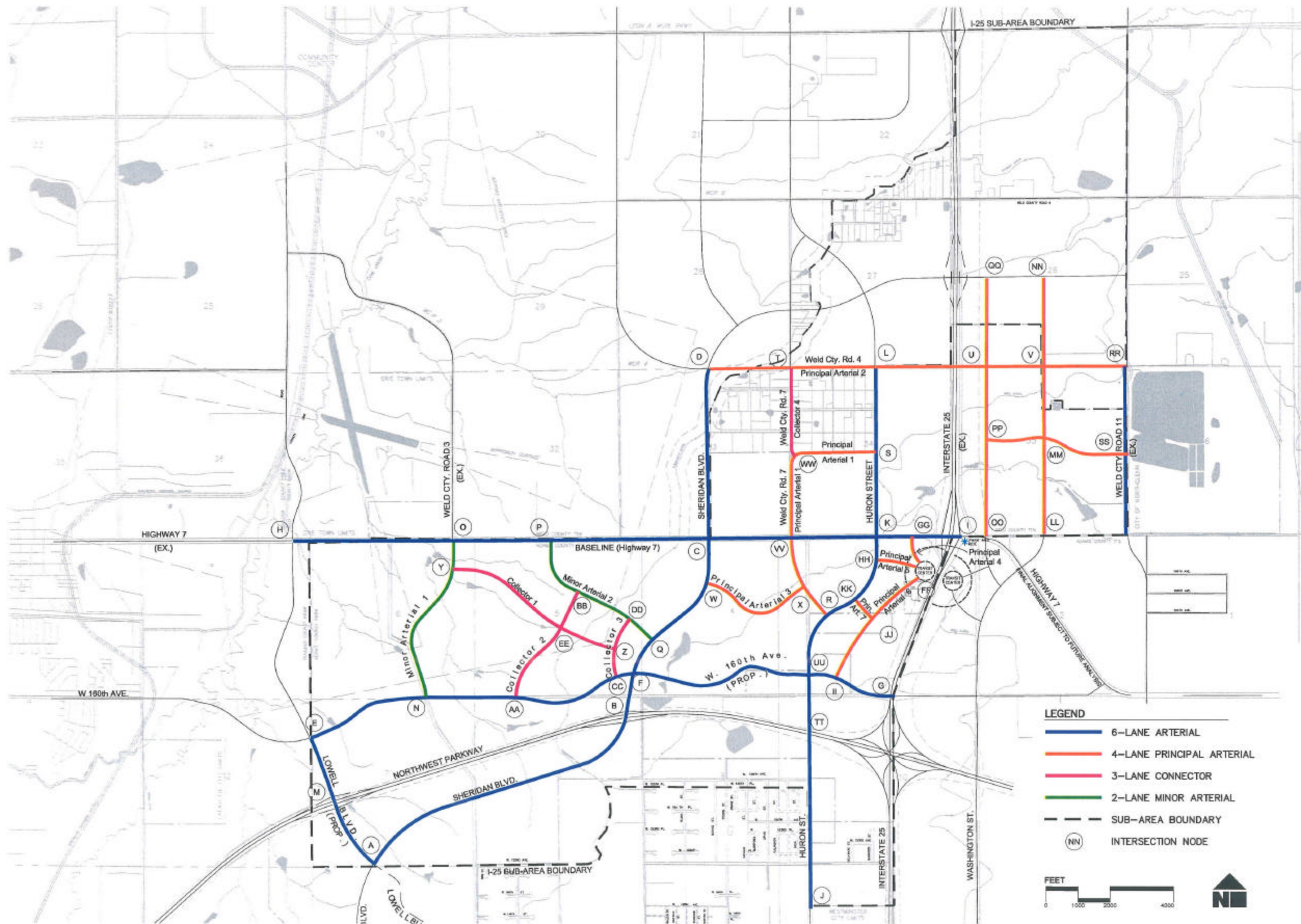


Exhibit M: Roadway Master Plan





V

Conceptual Sub-Area Engineering for Infrastructure

- Storm Drainage
- Dry Utilities
- Water and Sewer

Storm Drainage Master Plan

The purpose of the drainage analysis was to establish locations and sizes of proposed regional detention ponds and conveyance elements. These locations, as shown in Exhibit O, were chosen to maximize storm drainage benefits, while minimizing impacts on development.

The I-25 Sub-Area is generally comprised of undeveloped farmland used for variety of irrigated and dry-land farming and grazing operations. The portion of the Sub-Area south of Baseline Road (SH7) is bisected by the Community Ditch. This ditch extends along the top of a ridge that divides the drainage in the area. That area west of the Community Ditch drains eventually into Coal Creek; which, in turn, flows into Boulder Creek, north of the Town of Erie. That area east of the Community Ditch drains into Preble Creek, which runs eastward under Baseline Road (SH7) and I-25. Preble Creek flows eventually into Big Dry Creek, approximately two miles east of I-25. That portion of the Sub-Area north of Baseline Road (SH7) lies east of the Community Ditch and flows into Preble Creek. This area is bisected by Stanley Ditch, which has a minimal impact on drainage patterns since it does not ride a defined ridge.

Areas flowing west of the Community Ditch differ in character from those flowing to the east. Those flowing westerly typically drain into deeper ravines where channel slopes can range as high as three-to-five percent (3-5%). Areas east of the Community Ditch flow into wider drainage ways with more vegetation, and channel slopes seldom range above two percent (2%). Although both drainages include stock ponds, the ponding areas east of the Community Ditch are larger and maintain more constant levels due to irrigation operations.

The locations of drainage ways and conveyances generally follow historic drainage patterns and the established Land Use Plan. The only exceptions are areas where additional conveyance elements are to be provided to reach the main drainage ways.

Utilizing a conservative approach, trapezoidal drainage channels with low-flow channels have

been sized to convey 100-year storm levels, which provides for the 2-year storm. The widths of channel bottoms vary according to 100-year flow rates. Channels are assumed to flow three feet deep, with 4:1 side slopes, and a one-percent (1%) slope. Drop structures were utilized at those locations where channel slopes exceed one percent (1%).

Culverts under major road crossings have also been determined, and sized as either reinforced concrete pipe or box culverts (depending on the 100-year flow rate). An estimate of the total cost for the channel work and culvert crossings has been completed and is included in the "Opinion of Probable Infrastructure Costs".

The regional detention pond locations shown in Exhibit O were strategically placed, upstream of major road crossings and downstream of substantial drainage basins. This regional approach to detention maximizes the benefits of the ponds while minimizing the impacts to adjacent properties.

In order to determine detention pond volumes as accurately as possible, ponds were modeled as being "off-line," or sitting adjacent to the conveyance elements. Ponds can still be designed "on-line," however, with conveyance elements draining directly into them. To design ponds "on-line," emergency spillways must bypass upstream flows already detained. All ponds have been sized using a release rate basis equal to the 100-year historic runoff rate. It is possible to "over detain" in some pond locations in order to reduce the size of other detention ponds if necessary. Land area requirements and associated costs for the proposed regional ponds were based on established design assumptions and the character of the surrounding development.

In addition to Exhibit O, a more detailed drainage analysis — including hydro-logic modeling — is included in the Technical Appendix.

Dry Utilities Master Plan

The Dry Utilities Master Plan for the I-25 Sub-Area is illustrated by Exhibit P, indicating the locations of existing and proposed dry utilities through and immediately adjacent to the I-25

Sub-Area.

Gas

Public Service Company (PSCo) has existing gas lines along the current 160th Street alignment, through the Sub-Area. An existing 4-inch PED (Polyethylene direct bury) gas line along Huron Street may require upsizing and/or relocating.

Proposed gas mains, according to PSCo, will be 6-inch PM along major 4- and 6-lane arterials; 4-inch PM along minor 2-lane roadways; and 2-inch PM to service residential areas. These sizes are approximate, and are subject to more detailed analyses as gas loads are determined.

PSCo has also indicated that two gas regulator stations are likely to be required to serve the I-25 Sub-Area. Locations of these stations can be better approximated when gas loads and usage are determined. While regulator stations are paid for by PSCo, there are typically some up-front costs for developers for the gas system. However, it is anticipated that reimbursements from Gas Construction Allowances will result in zero costs to developers for gas service.

Electric

Limited PSCo electric distribution lines and a 115 kv overhead electric transmission main line are located along the existing 160th Street alignment, through the Sub-Area. The transmission line may require underground relocation by developers whose projects are located in this area.

United Power also has some existing electrical lines within the I-25 Sub-Area, and will be its primary electric server at final build-out. United Power currently has a substation at 136th Street and I-25, but plans to relocate the facility north of its present location, in Weld County. United Power also plans to underground some of its overhead transmission lines along I-25. United Power's infrastructure is funded through service rates, not by developers. Utility relocations, however, are not underwritten by United Power, and may require developer funding.

United Power provided the following information regarding proposed electrical distribution lines in the Sub-Area: 1000 mcm lines along major 4- and

6-lane arterials; 500 mcm lines along minor 2 lane roadways.

Telephone

US West Communications is the sole provider of telecommunication services within the I-25 Sub-Area, and the entire cost of the area's telecommunications distribution system will be sustained by US West. The company will also own and maintain the system. Locations and needs relative to fiber optics will be determined by US West as development occurs. US West requests that construction of its lines be coordinated with other dry utilities in order to use the same utility trenches. The company also requires 25-foot-by-30-foot (25'X30') easements for locating electronic cabinets required in business parks and residential areas. These will be located to allow effective landscape screening.

Developers will be responsible for relocating any telecommunication lines that are displaced by new development.

Cable Television

Cable television service will be provided by T.C.I. of Colorado and/or Comcast Communications, depending on territorial agreements at the time and place development occurs. Each company pays for the installation of its lines, but also requests that construction be coordinated with other dry utilities in order to install in open trenches.

Water and Sewer Master Plan

Water

The North Broomfield Sub-Area lies in three water pressure zones as shown on Exhibit Q. The water mains shown in pink comprise Zone IV-N (ground elevations between 5180 and 5300 feet) that will be served by gravity from a new 3-MG water tank located just north of W. 152nd Avenue and living Street. The high service pumps at the water treatment facility will serve this tank through an altitude valve. The new tank will have to have a base elevation of 5430 and a "tank full" elevation of 5450 to serve Zone IV-N.

The water mains shown in blue comprise Zone V and are fed through pressure reducing valves (PRVs) from Zone IV-N. Zone V ground elevations range from 5090 to 5180 feet.

The yellow area or Zone III-N encompasses the higher elevation ground (generally 5300 feet to 5400) which cannot be served with sufficient water pressure by the new tank. This area will be served from a tank located at W. 136th Avenue and Main Street (next to the existing Carbon Road tank) by extending water mains from W. 144th Avenue north to the site.

Sewer

The major sanitary sewer basins for the North Broomfield Sub-Area are shown in Exhibit R. Sewer service for the North Broomfield Sub-Area will be pumped from a series of lift stations back to the existing Broomfield Waste Water Treatment Plant through the North Outfall and Zuni Outfall. Collection of waste water from the North Broomfield Sub-Area will require significant upgrades to the existing Zuni Interceptor and lift station as well as upgrades to portions of the North Outfall.

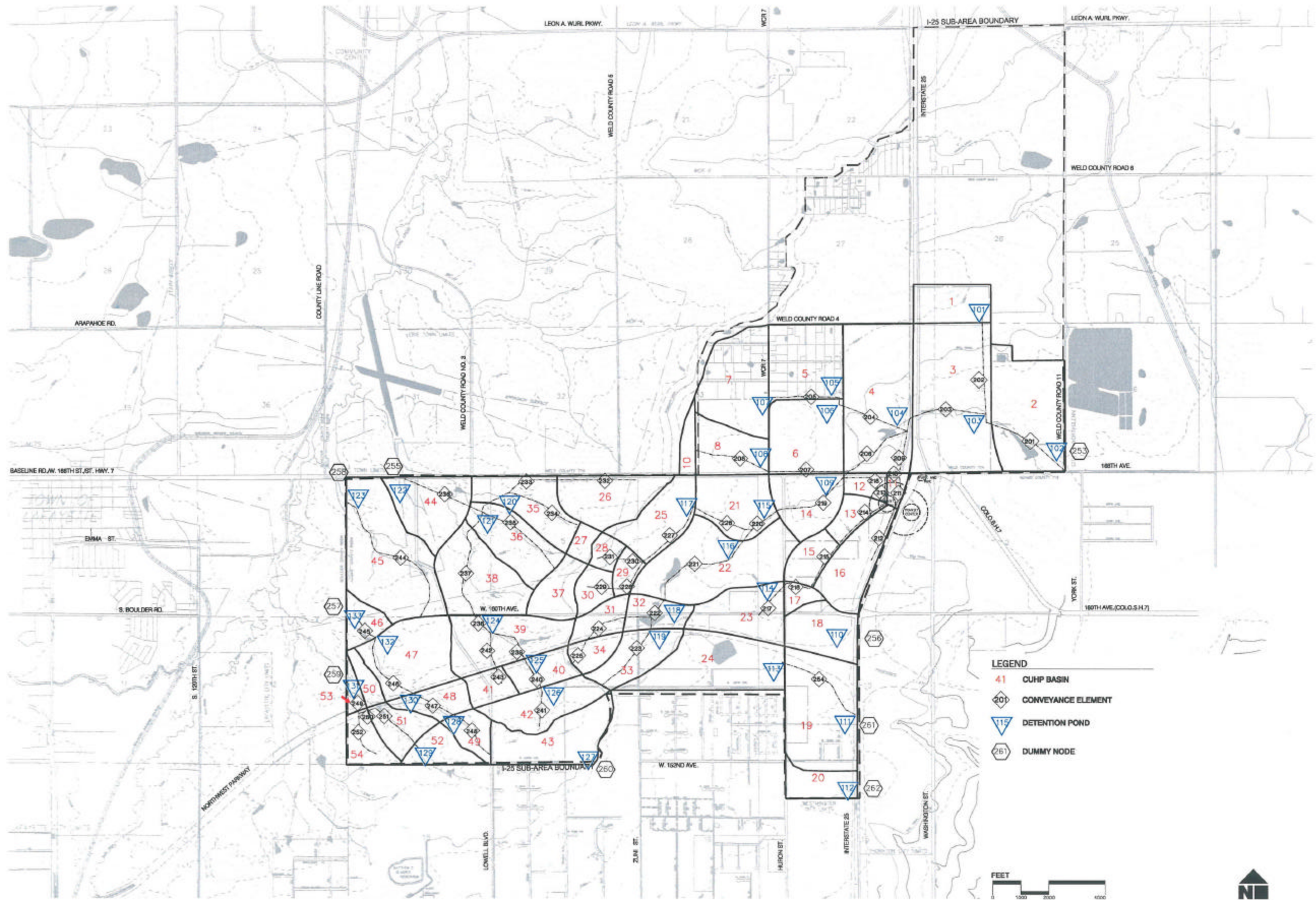


Exhibit O: Storm Drainage Master Plan

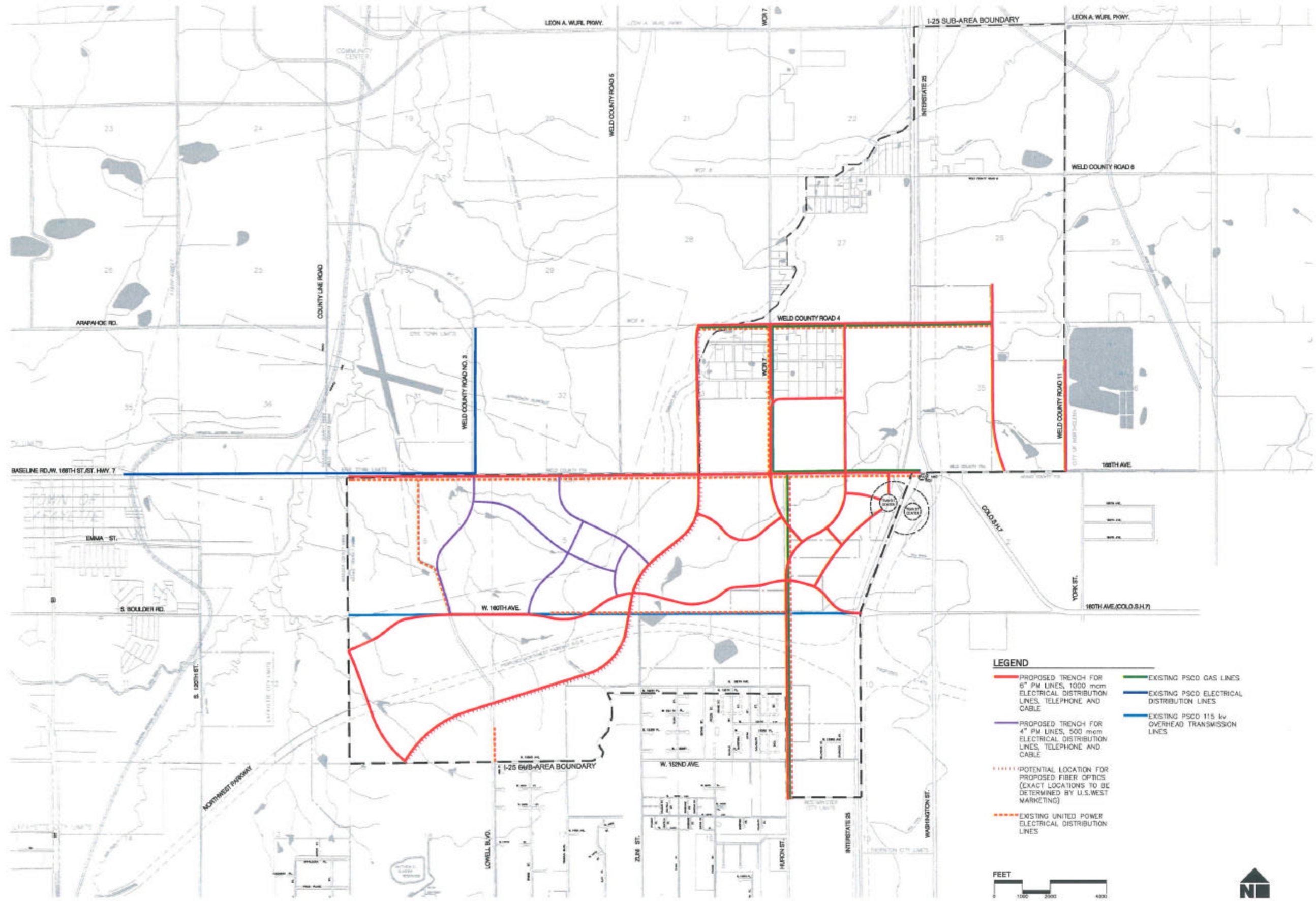


Exhibit P: Dry Utilities Master Plan

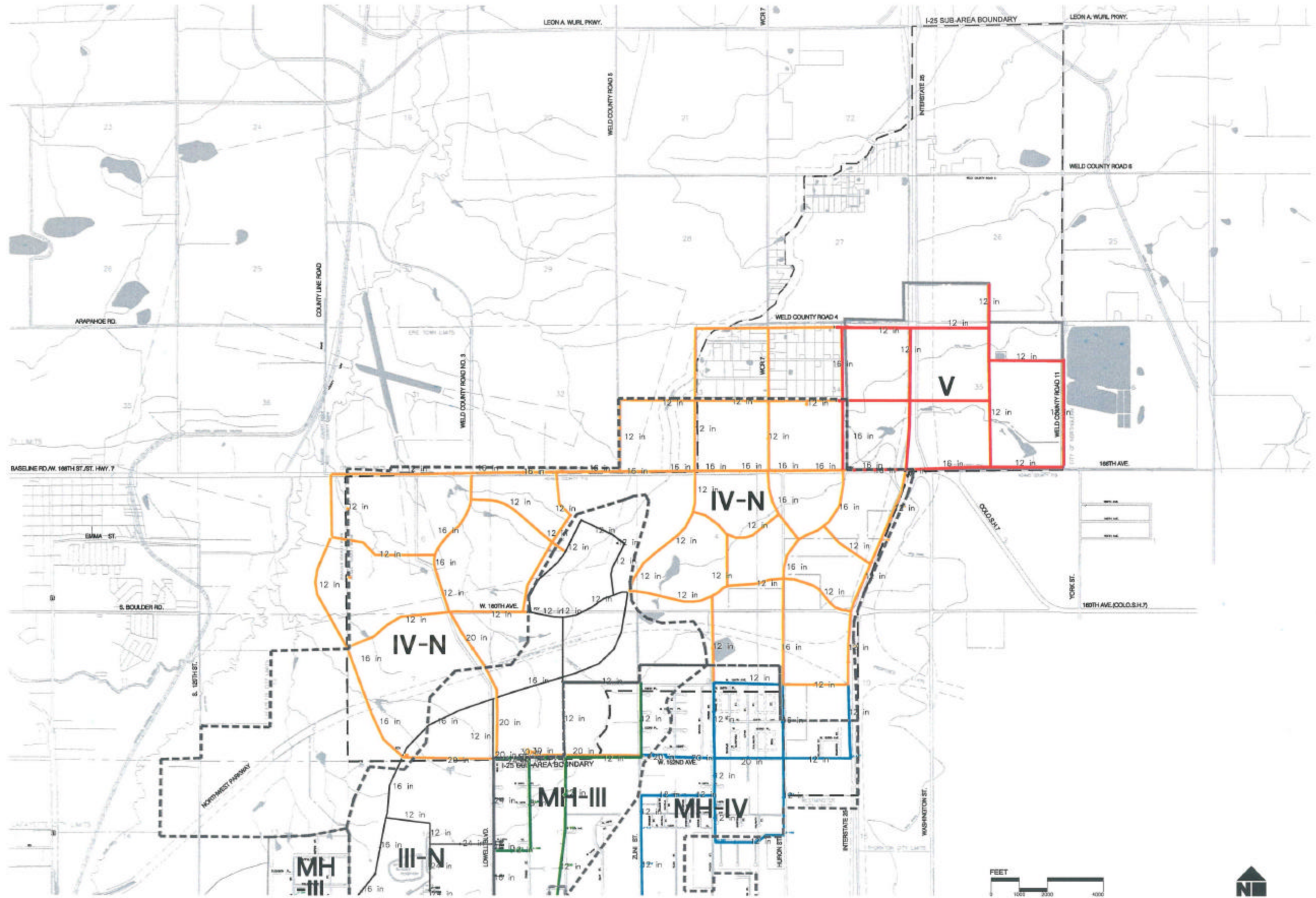


Exhibit Q: Water Master Plan

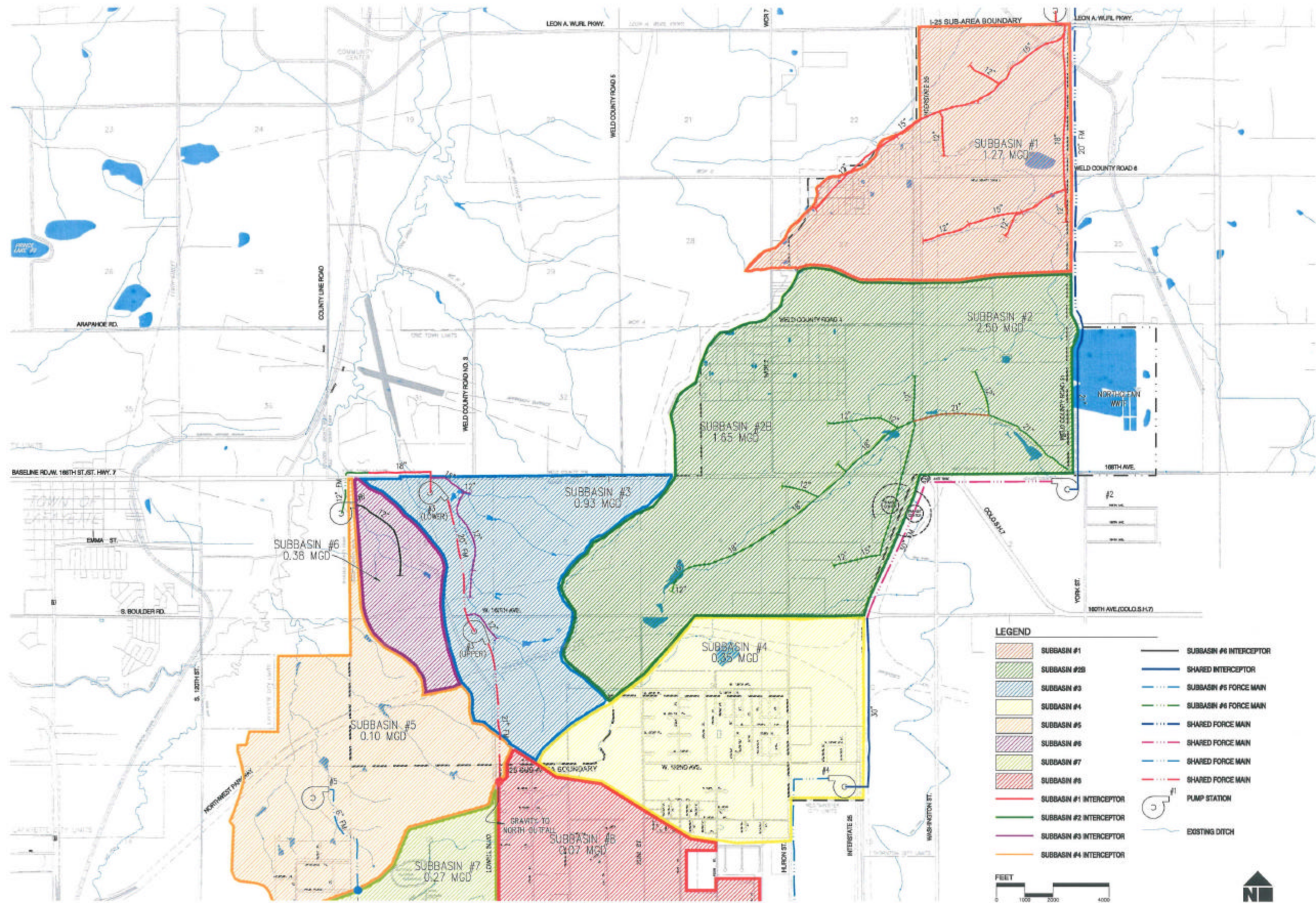
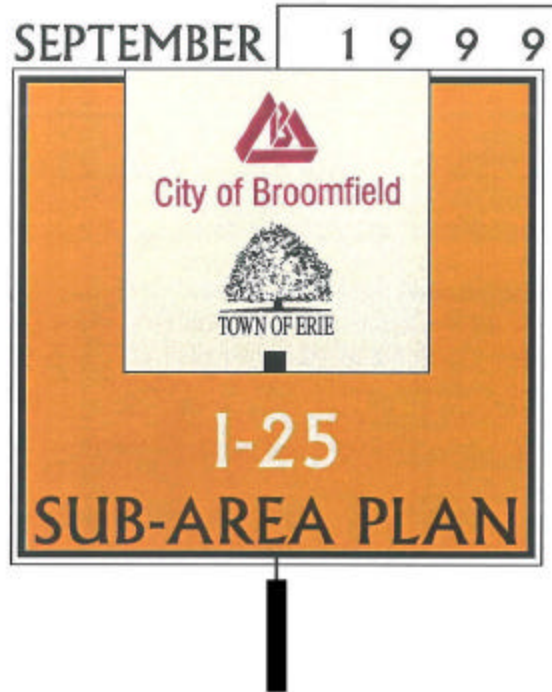
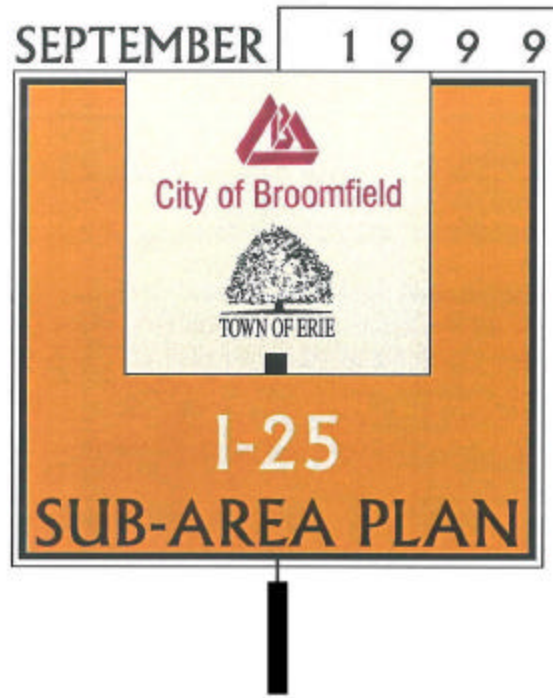


Exhibit R: Sewer Master Plan



VI

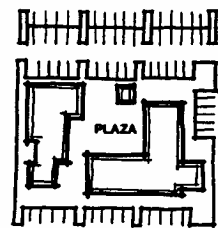
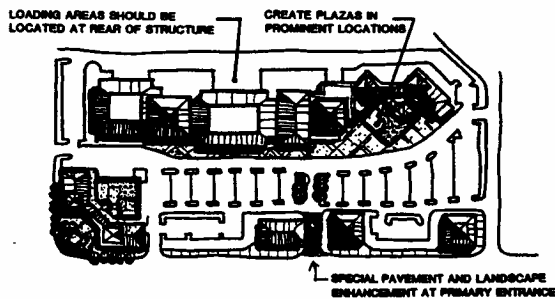
SUB-AREA DESIGN STANDARDS



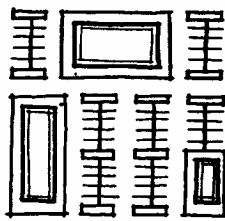
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SITE PLANNING DESIGN STANDARDS

- Building Siting and Orientation
- Building and Parking Setbacks
- View Corridors and Public Amenities
- Site Coverage Requirements
- Utilities, Mechanical Service, and Storage Areas
- Water Quality Control and Drainage



CLUSTER BUILDINGS TO CREATE PEDESTRIAN AREAS



DO NOT SEPARATE BUILDINGS WITH PARKING LOTS

CLUSTER BUILDINGS TO CREATE PLAZAS AND PEDESTRIAN GATHERING PLACES

Goals:

1. Organize and orchestrate the locations of buildings, open space, circulation features, and parking areas to achieve a well-designed and cohesive image that reinforces the overall vision for Broomfield and the I-25 Sub-Area.
2. Develop a focused, efficient pattern of buildings and open spaces in order to concentrate activities, rather than dispersing them in a manner requiring greater dependency upon automobiles.
3. Encourage the placement of buildings to focus people-oriented activities along streets in front of buildings.
4. Respect the topography of the I-25 Sub-Area and minimize physical and visual alterations of land-forms.
5. Promote the locations and orientations of buildings to create and enclose pedestrian-oriented spaces such as courtyards, greens, plazas, and squares.

Building Siting and Orientation

Design Standard:

General

1. Buildings should be sited so the character of existing land forms and site features is respected; relationships between buildings are strong; pedestrian and vehicular circulation are facilitated; and an ambient visual quality is maintained from adjacent properties.
2. The siting of buildings should be accomplished in a comprehensive and coordinated manner to provide order and compatibility, and to avoid jumbled or confusing development patterns.
3. The siting of buildings should respond to solar, wind, and other climactic factors.

Commercial

1. The location and orientation of buildings in commercial developments should weigh pedestrian and auto comfort, visibility, and accessibility. While anchor stores may require orientation to arterial roadways or parking lots, smaller shops should be oriented to pedestrian "Main Streets," courtyards, greens, plazas, and squares.
2. Traditional building configurations that create "Main Street" storefronts can co-exist with conventional arterial-oriented anchor stores, accommodating both pedestrians and automobiles.
3. Conventional developments that accommodate large anchor tenants should be configured to promote convenient parking and vehicular access, as well as parking lot visibility. Smaller shops can be configured to form pedestrian-oriented "Main Streets" characterized by parallel and diagonal on-street parking and rear-loaded parking lots.
4. Long, "barracks-like" strip commercial configurations are discouraged.
5. When clustering buildings is impractical, visual links between individual buildings should be established. Such links can be accomplished through the use of arcade systems, trellises, pergolas, or formal landscaping (e.g. tree allees or bosques) designed to promote visual continuity.
6. Open lands areas such as courtyards, greens, plazas, and squares should be clustered within larger landscape/hardscape settings, rather than dispersed into areas where they will have little impact (e.g. at building peripheries, behind structures, or out of the public view).
7. Open lands areas should incorporate pedestrian amenities such as arcades, trellises, pergolas, street furniture, fountains, planters and plant containers, decorative lighting, and enhanced pavement features (e.g. interlocking pavers, granite setts,

sandblasted colored concrete).

8. Buildings should be sited to create "outdoor rooms," open spaces framed by buildings that have clear, recognizable shapes. These spaces should be thoughtfully planned, not represent "left-over," undefined areas between buildings.
9. Buildings should be sited to compliment existing, adjacent buildings.
10. Freestanding buildings should orient storefront facades and entries towards the street.

Single-Family Residential

1. Single-family homes should be sited to create streetscape variety and visual interest. Subdivisions of seemingly identical homes sited with no variation on long, uninterrupted streets are discouraged.
2. Single-family homes should be sited to mitigate garage impacts on the streetscene by varying their locations and orientations. A combination of recessed, front-, and side/rear-loaded garages should be provided.

Multi-Family Residential

1. Parking lots often overwhelm multi-family sites, and common open space is frequently relegated to meaningless left-over areas that cannot accommodate people or outdoor activities. Multi-family site plans should cluster buildings to create meaningful and usable open space areas.
2. Parking stalls and parking aisles should not encircle multi-family projects. Parking should be located in individual pods or small, defined parking courts.
3. Multi-family projects should not be "walled-off" from adjacent neighborhoods. They should integrate physically and visually.

Building and Parking Setbacks

Design Standard:

Conventional Commercial

1. Conventional commercial developments should contribute well-landscaped, pedestrian-friendly character to the streetscene. Conventional buildings and parking areas should be set back a sufficient distance from perimeter and interior streets to create distinct landscape buffers.
2. Conventional developments should stagger building setbacks, above minimum standards if necessary, to enhance visual interest along the streetscene.
3. Wrapping the perimeters of conventional developments with parking lots is discouraged.
4. Minimum setbacks are as follows:

Conventional Commercial Buildings and Parking Setbacks

(Measured from property lines or rights-of-way)

Freeway/principal arterial R.O.W.	75 ft. *
Minor arterial/major collector R.O.W.	30 ft
Collector/local road R.O.W.	20 ft.
Perimeter property lines	30 ft.
Internal property lines	20 ft.

* Setbacks from freeway/principal arterial R.O.W.'s can be reduced to 30 feet if additional landscape buffering, screening, or other acceptable mitigation techniques are provided and approved by the City. Varying setbacks to undulate landscape zones is encouraged.

Traditional Neighborhood Developments - Commercial

1. Building setbacks associated with Traditional Neighborhood Development (TND) commercial projects should be minimal. Setbacks should reflect the desired character of traditional downtown areas by orienting buildings to the sidewalk.
2. Common walls, build-to lines, and minimal front building setbacks are encouraged as appropriate expressions of TND commercial

areas.

3. Minimal building setbacks bring buildings and pedestrians closer to the street and are encouraged. This defined edge frames the streetscape, creating a "Main Street" image that encourages window-shopping and other street-side activities.
4. Small shops should be located along the street edge, with minimum setbacks. Anchor tenant buildings such as supermarkets, however, may not be held as strictly to this requirement because they often require visible surface parking for patrons' major shopping trips.

Single-Family Residential

1. To create different patterns of buildings and increase streetscape variety, developers are expected to vary the siting of single-family homes and garages dose-to and back-from the street (staggering).
2. As densities increase, building setbacks from public and private streets should be minimized, while maintaining privacy.
3. Setbacks should reflect the desired density and character of the neighborhood.

Multi-Family Residential

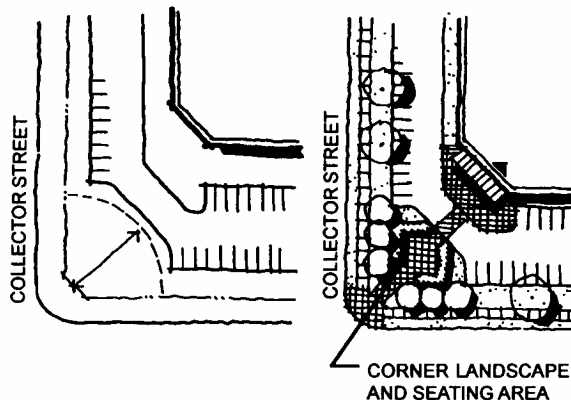
1. Multi-family building setbacks should be varied to promote streetscape variety. Within individual sites, buildings should be clustered to create meaningful open space for residents.
2. Separations between multi-family building should be ample, and designed to prevent long and narrow corridors between units.
3. Multi-family buildings should be composed of simple yet varied planes to assure compatibility and promote variety in overall building forms.

View Corridors and Public Amenities

Design Standard:

General

1. Desirable views from and into the I-25 Sub-Area should be preserved. Attractive natural features such as the Flatirons and Rocky Mountain backdrop, as well as distinctive on-site features, parks, and open spaces, are amenities to be shared by all. Maximizing view opportunities to these features from roadways, open space corridors, and buildings is encouraged. Developers are also encouraged to emphasize these natural features by reflecting them in the designs of individual developments.
2. Public amenities such as courtyards, greens, plazas, squares, and other open areas should be incorporated into both large-scale developments and individual projects. These amenities should be designed to be easily accessible and reasonably comfortable for a substantial part of each year.



TREATMENT OF STREET CORNERS WITH PARKING

Site Coverage Requirements

Design Standard:

Commercial

1. Site coverages associated with conventional commercial developments are as follows:
 - Maximum coverage for the total of building(s), parking, and driveway(s) within each development parcel or cluster of parcels is 75 percent.
 - Minimum amount of open areas to be provided within a parcel or cluster of parcels is 25 percent.
 - Open areas may include pedestrian-oriented areas such as sidewalks and hardscape plazas. These areas are in addition to any required public land dedication. (With City approval, buildings over 350,000 square feet GLA that

accommodate large public indoor spaces, may count these as required open areas.

Single-Family Residential

1. Maximum building coverages for single-family development are as follows:
 - 0-2 DU/A 25 Percent
 - 2-4 DU/A 40 Percent
 - 4-8 DU/A 50 Percent

Multi Family Residential

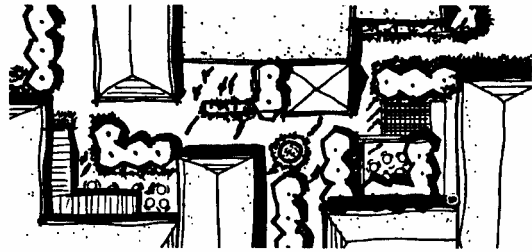
1. Maximum building coverage for multi-family parcels is 50 percent for 8 + DU/A.

Utilities, Mechanical Service and Storage Areas

Design Standard:

General

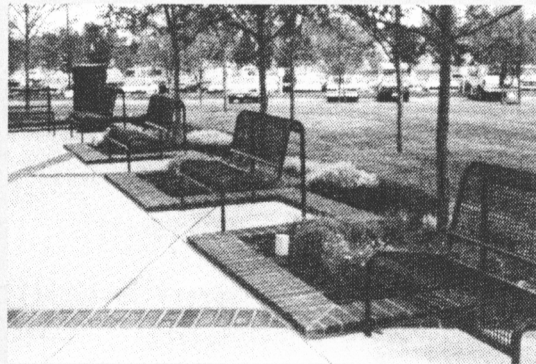
1. The visual and auditory impacts of utilities, mechanical equipment, data transmission dishes, towers, microwaves antennas, and other services and equipment should be minimized within all developments.
2. All new permanent utility lines shall be located underground.
3. All transformers, utility equipment, and utility cabinets shall be screened from public view.
4. The visual impacts of service, delivery, and storage areas should be minimized, especially from public roadways, designated view corridors, and adjacent properties.

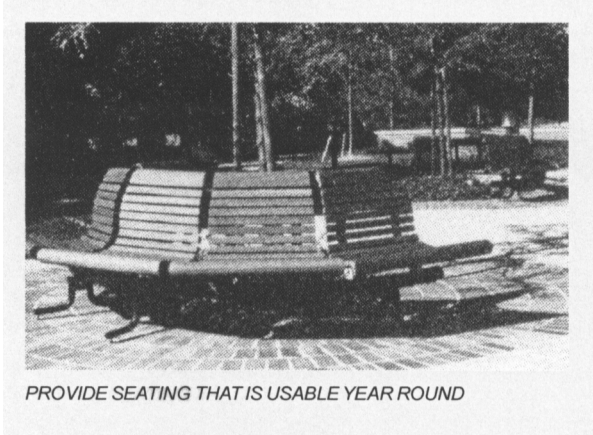


TREAT SPACES BETWEEN BUILDINGS AS OUTDOOR ROOMS



DELINEATE AND ENHANCE AREAS OF INTENSE PEDESTRIAN ACTIVITY



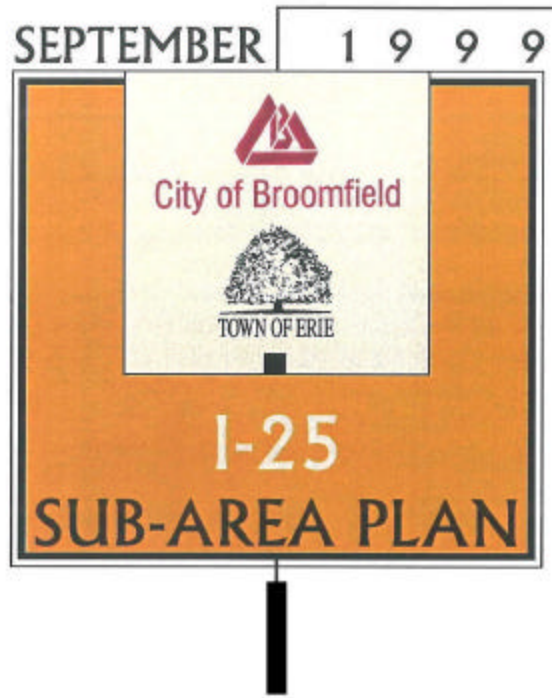


Water Quality Control and Drainage

Design Standard:

General

1. To the greatest extent possible, stormwater and site drainage facilities should be designed as visual and recreational amenities, as well as site development necessities.
2. Downstream impacts should be minimized. Using consolidated detention/retention ponds, grassy swales, and natural-like stream bed materials is encouraged.
3. The natural continuity of drainage swales should be maintained through development sites, even when modified by drainage improvements.
4. Stormwater should not carry undesirable elements. Bio-filtration and particle-settling areas or other Best Management Practices are strongly encouraged.
5. Site drainage designs should minimize Water collection near building foundations, entrances, and service ramps.



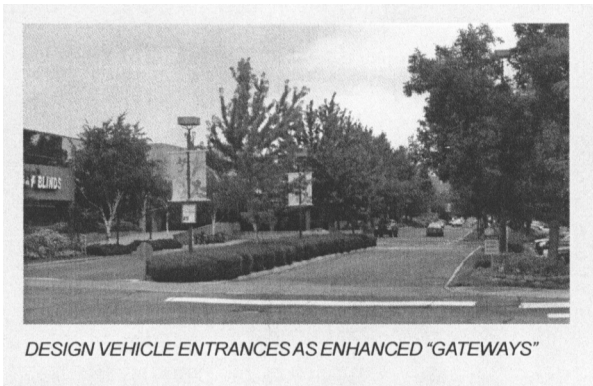
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VEHICULAR CIRCULATION AND PARKING DESIGN STANDARDS

- Vehicular Access
- Vehicular Circulation
- Passenger Drop-Off Areas
- Service, Delivery, Emergency, and Utility Access
- Public Transit Facilities
- Surface Parking Lots
- Parking Structures and Parking Beneath Buildings
- Provisions for Future Parking Lots and Structures
- Motorcycle Parking

Goals:

1. Establish a circulation network that creates and preserves a pedestrian-oriented environment while providing an adequate roadway system.
2. Develop a circulation network that promotes a desired neighborhood character. The presence of heavy through-traffic on neighborhood streets diminishes the quality of life for residents.
3. Promote access, circulation, and parking systems that provide safe, efficient, convenient, and functional movement of different modes of transportation.
4. Promote alternative transportation methods, including transit ridership, walking, hiking, and bicycling.
5. Provide parking facilities to serve residential, commercial, and employment needs.

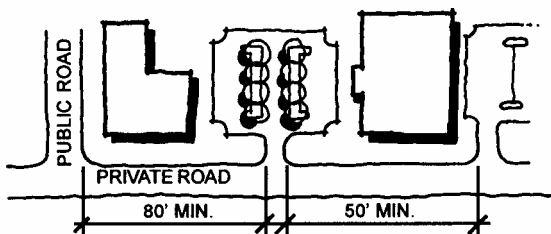


Vehicular Access

Design Standard:

General

1. Access points from public roadways to private property (development entries, project curb-cuts, etc.) should be minimized to promote safe and efficient traffic movement.
2. Access points should be spaced to provide safe, efficient, and non-congested vehicular circulation. A variation to the Plan may be allowed if its request includes a comprehensive traffic analysis that demonstrates such variation does not diminish levels of service to the street system or adjacent projects.
3. Entrances to developments should be designed as "gateways" incorporating consistent design elements that include entrance monuments, accent paving, special landscape treatments, and lighting fixtures. Design elements should be visually



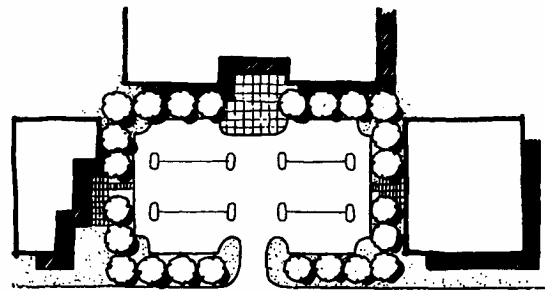
MINIMUM SEPARATION BETWEEN INTERSECTIONS AND CURB CUTS

interesting and materials consistent with others used in the overall development streetscape.

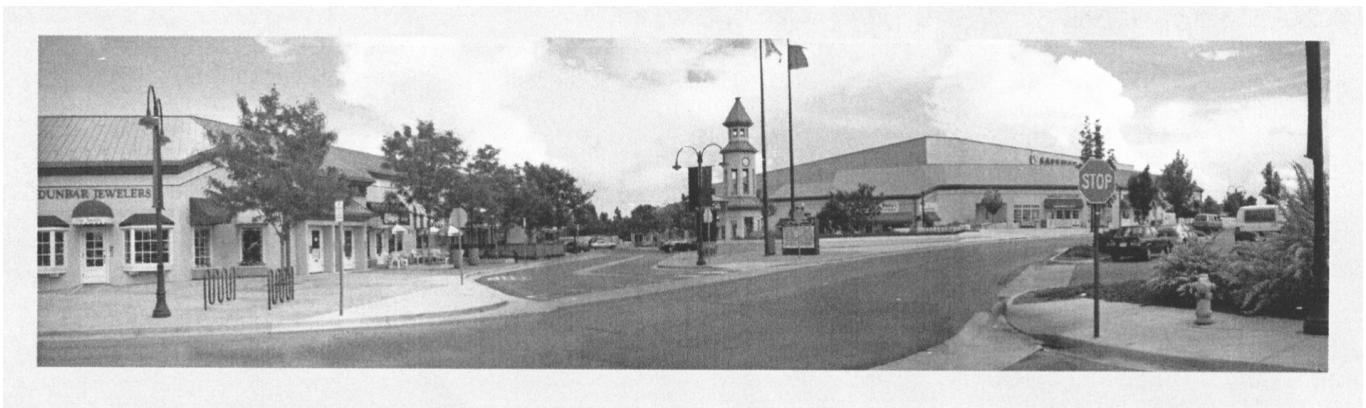
4. Site access points to developments should be located as far as possible from street intersections in order that adequate stacking room is provided. Minimum separations between public and/or private road intersections and individual parcel curb cuts should be maintained.
5. Reciprocal access between parcels shall be provided.

Commercial

1. Common or shared entries are encouraged.
2. Site entries should be located to minimize pedestrian-vehicular conflicts, and incorporate enhanced paving to differentiate "crosswalks" from sidewalks.
3. Entrances within commercial developments should be designed to align with focal points such as landmark towers or prominent buildings.

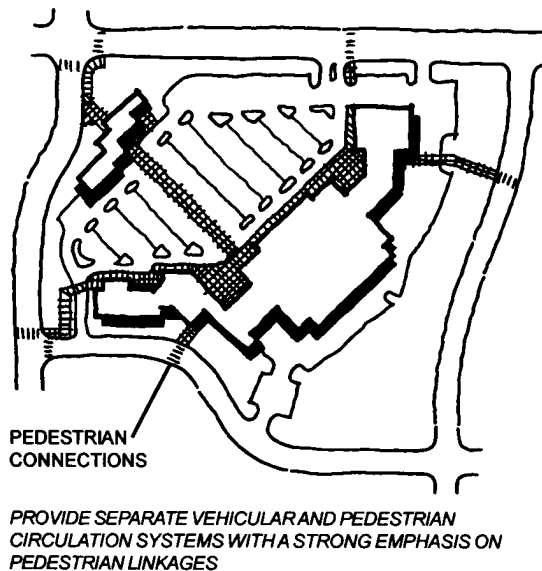
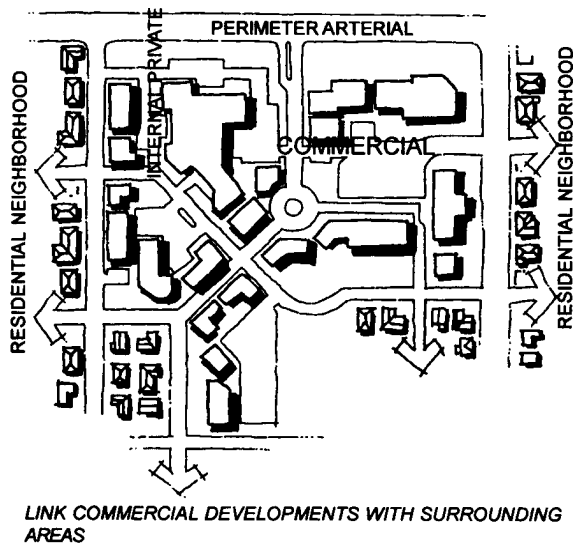


PROVIDE COMMON OR SHARED ENTRIES WHEN POSSIBLE



Multi-Family Residential

1. Principal vehicular accesses into multi-family housing projects should be through entry drives, not parking aisles.
2. An entry area should provide a clear overview of a project. Entry driveways should align with any clubhouse, recreation building, or leasing office designed to terminate the entrance driveway axis.
3. Hardscape and landscape treatments that announce multi-family project entries are encouraged.



Vehicular Circulation

Design Standard:

General

1. From the overall I-25 Sub Area scale to individual building sites, the vehicular circulation system should provide a functional hierarchy of roadways which includes: Perimeter Arterial Streets; Internal Private or Public Connector and Local Roadways; Internal Private Drives; and Service Drives.
2. The circulation network should provide for the smooth, safe, convenient and functional movement of all transportation modes, including vehicles, transit buses, bikes, and pedestrians.
3. The vehicular circulation system should link developments with surrounding areas by extending public and/or private streets and sidewalks.
4. Required vehicle stacking distances and sight line distances shall be provided.

Commercial

1. Parking aisles and associated parking spaces should be separated from vehicle circulation routes and entry drives, when practical to the overall development scenario.

2. Internal roadways and drive aisles should reinforce natural and man-made landforms, and lead drivers visually to building entries or other intended destinations.

Single-Family Residential

1. Within single family developments, street widths, design speeds, and numbers of travel lanes should be minimized, without compromising auto and pedestrian safety
2. Narrow streets that slow traffic and require drivers to be cautious are encouraged. Street dimensions are intended to make streets more intimate in scale, while providing adequately for municipal service vehicle access.

Multi-Family Residential

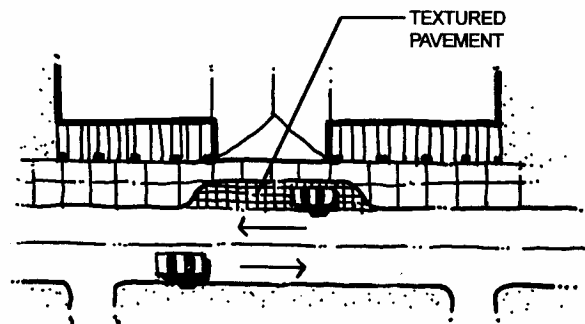
1. Long, uninterrupted parking aisles are discouraged. Parking aisles should be "broken" by buildings, garages, carports, and open space. No more than 10 spaces should be provided without such interruption. Such clusters of 10 (or fewer) parking spaces should be separated by landscape fingers no less than 6 feet wide.

Passenger Drop-Off Areas

Design Standard:

General

1. Passenger drop-off areas should be incorporated into all multi-use projects to provide safe and convenient access to building entries.
2. Such drop-off areas should be physically separated from parking lots through the use of landscaped islands and roundabouts.
3. Textured paving materials should be used to distinguish drop-off areas from adjacent travel lanes and on-site vehicular circulation aisles.
4. Signs should designate drop-off zones.



DESIGN DROP-OFF LANES SO AS TO NOT OBSTRUCT TRAFFIC FLOW
AND USE TEXTURED PAVEMENT TO DELINEATE THIS ZONE.
PROVIDE DIRECTIONAL SIGNAGE TO TRANSIT FACILITIES

Service, Delivery, Emergency and Utility Access

Design Standard:

General

1. Convenient routes for required service, emergency, and utility vehicles should be provided and marked clearly.
2. Circulation patterns within developments should be designed to provide safe and efficient turning movements for all anticipated service and emergency vehicles.

Commercial

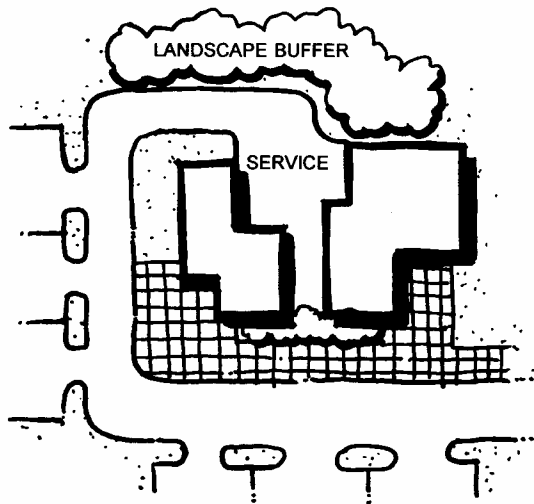
1. The design of individual commercial developments shall meet all regulatory requirements for truck turning radii without sacrificing safety and appearances.
2. When feasible, emergency access routes should be connected between adjacent properties.
3. Shared service and delivery access between adjacent parcels should be provided.

Public Transit Facilities

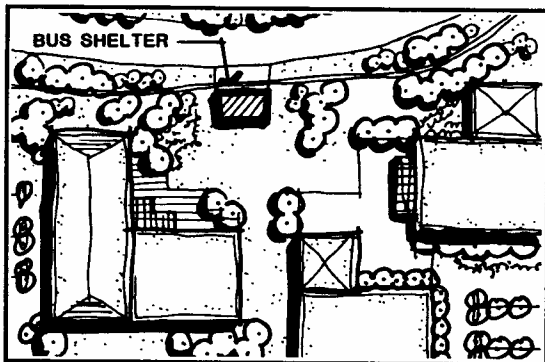
Design Standard:

General

1. Access to public transit facilities should be provided within all developments consistent with the I-25 Sub-Area goal of accommodating high volumes of transit patronage.
2. Routes, access points, internal site circulation, and boarding areas should be provided along all major perimeter roadways for transit.
3. The planning and design of boarding areas shall be coordinated with RTD.



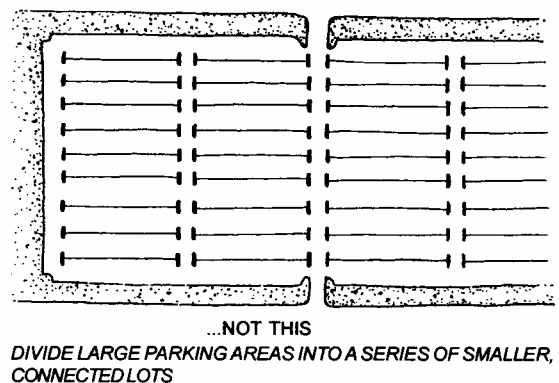
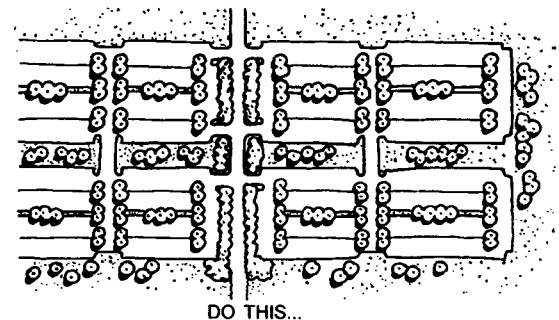
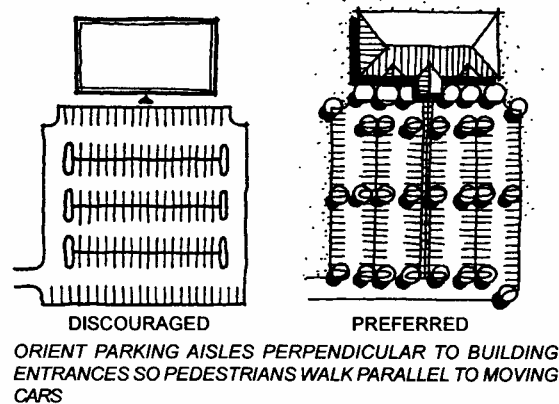
PROVIDE SHARED SERVICE AREAS BETWEEN BUILDINGS OR PARCELS WHEN POSSIBLE



LOCATE BUS SHELTERS CLOSE TO SIGNIFICANT CLUSTERS OF BUILDINGS

Commercial - Employment Sites

1. All commercial sites with projected employee numbers of 1,000 or more should designate specific locations for future transit boarding areas on internal or perimeter roadways.
2. Boarding areas should be designed and maintained in a manner that promotes public transit as an attractive, safe, and convenient mode of travel for employees and patrons. Transit boarding areas should be located close to building entrances of all large buildings (>50,000 SF GLA) or clusters of buildings.
3. Transit boarding areas should include attractive shelters with appealing character, and be large enough to protect peak period standees from rain and snow. These facilities should be designed in full accordance with the Americans with Disabilities Act (ADA).
4. Transit boarding areas should incorporate either bus pullout bays (arterial roads and other roads with forecast traffic over 15,000 vehicles per day), or on-street bus pads.
5. Pedestrian sidewalk connections should be provided between building entrances and transit boarding areas.



Surface Parking Lots

Design Standard:

General

1. Vehicle parking should be provided that meets the location and quantity requirements of specific uses, without undermining the functions of other transportation modes or detracting from attractive pedestrian environments.
2. All parking lots shall be paved, screened with perimeter landscaping treatments, and planted with landscaped islands.

3. Safe pedestrian connections shall be provided through parking lots to buildings.
4. Parking spaces shall not abut structures directly. Parking areas should be separated from buildings by raised sidewalks and landscaped planters.
5. Parking aisles should be oriented perpendicular to buildings so pedestrians walk parallel to moving cars; or separated, distinct pedestrian walkways should be provided.
6. Parking lots should link buildings to the street sidewalk system as extensions of the pedestrian environment. Design features such as sidewalks with enhanced paving and overhead trellis structures should be used to link site features physically and visually.
7. To lessen visual impacts, parking areas that accommodate more than 100 vehicles should be divided into a series of small, connected lots defined by tree rows that create "outdoor rooms".
8. Projects that require parking for more than 500 cars shall provide a comprehensive parking study, including landscape mitigation techniques to reduce the visual impact of such large parking areas.
9. Long, straight access aisles that facilitate speeding should be avoided.
10. Access ramps and handicapped parking spaces should be provided in accordance with local codes and ADA requirements.

Commercial - Employment Sites

1. Parking lots should not dominate the frontage of pedestrian-oriented streets, interrupt pedestrian routes, or impact surrounding residential neighborhoods negatively.
2. Parking lots that serve convenience and neighborhood-level commercial developments, and small office complexes, should be located to the rears or sides of buildings with minimal parking between the

front of the building and the street.

3. Whenever possible, parking lots should occupy no more than approximately one-third of a development parcel's street frontage, or no more than 75 linear feet of a street.
4. To reduce their negative impacts on streetscapes and pedestrian circulation, parking lots associated with large commercial and office developments should be divided into small components (three acres or less in size) with internal streets, tree rows, or buildings.
5. Shared parking arrangements between different uses with different peak parking demands is encouraged to reduce the total number of parking spaces.
6. Cross-parking easements for reciprocal access agreements arrangements shall be required.
7. Landscaped islands shall be provided at the ends of all rows of parking.
8. Curb stops are prohibited in surface parking lots.
9. For every 20 parking spaces provided within a surface parking lot, a landscaped parking finger shall be provided. Projects with buildings over 300,000 SF in size shall require a parking lot landscape plan that mitigates the negative impacts of its size. Such mitigation techniques may be considered as alternatives to this landscaped finger requirement.
10. The minimum number of parking spaces required shall be in accordance with the City of Broomfield Municipal Code.

Multi-Family Residential

1. In higher-density residential projects, the preferred means of accommodating parking are: parking drives (parallel parking); parking courts; and enclosed garages within residential buildings. Projects with long, monotonous parking drives or large, undivided parking lots are not desired. When

economic considerations preclude parking within residential buildings (e.g., tuck-under and freestanding, enclosed garages), dispersed parking courts are the desired alternative.

2. Drive aisles located on the peripheries of multi-family projects create "race track" circulation and parking configurations, and isolate these residential developments from their neighbors. and should be avoided.
3. Parking should be located in dispersed pods or parking courts accommodating no more than 60 parking spaces per location. Such parking configurations require caution from drivers and create safer, more comfortable pedestrian environments.
4. Parking areas should be visible from the residential units of their prospective users, providing informal "surveillance" and assisting security.
5. Buildings should be configured to create parking court enclosures. Parking courtyards defined by buildings should consist of no more than two double-loaded parking aisles (bays) adjacent to one other.
6. Generally, the length of a parking court should not exceed 15 spaces. Parking courts should be separated from each other by dwelling units or by landscaped open space buffers no less than 30 feet wide.

Parking Structures and Parking Beneath Buildings

Design Standard:

General

1. Well-designed parking structures and below-grade parking are encouraged as a means of providing convenient access and maximizing open space areas within multi-family development projects.
2. The appearance of parking structures, whether freestanding or attached to buildings,

should relate to the architectural style of the buildings they serve.

3. Convenient, weather-protected, pedestrian connections should be provided between parking structures, main buildings, and pedestrian pick-up points.
4. Atriums and light wells should illuminate parking structures with natural light.
5. Separate structures and ground-level portions of parking structures should be screened from surface lots with landscaped planters.

Commercial - Employment Sites

1. Parking structures that line streets typically do not provide visual interest, safety, or suitable shelter for pedestrians. Retail uses should be located on the ground floor of parking structures and incorporated into the building's design. Large office buildings can also be designed so that the usable portions of the buildings wrap around their structured parking.

Multi-Family Residential

1. Parking structures or below-grade parking are encouraged in conjunction with high- density residential projects in order to minimize site coverage. Such structures shall be designed to harmonize with the architectural style of adjacent or attached residential buildings.

Provisions for Future Parking Lots and Structures

Design Standard:

General

1. Plans for large projects to be developed in phases, should also include the locations of future parking areas.
2. Provision should also be made for increased parking requirements related to expansion plans, and for possible changes in the uses of

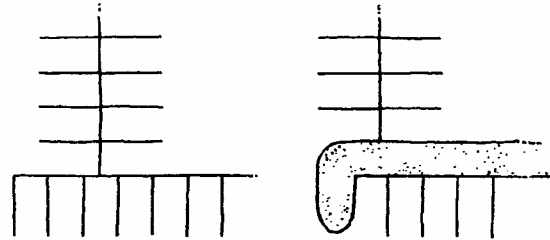
buildings or complexes of buildings. When building expansions are planned, reserving appropriate amounts of unimproved land for additional parking, or making provisions for structured parking, shall be required at a project's outset.

Motorcycle Parking

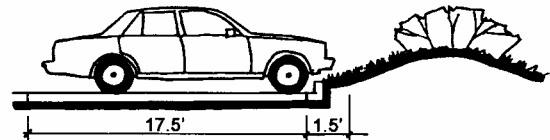
Policy/Standard:

General

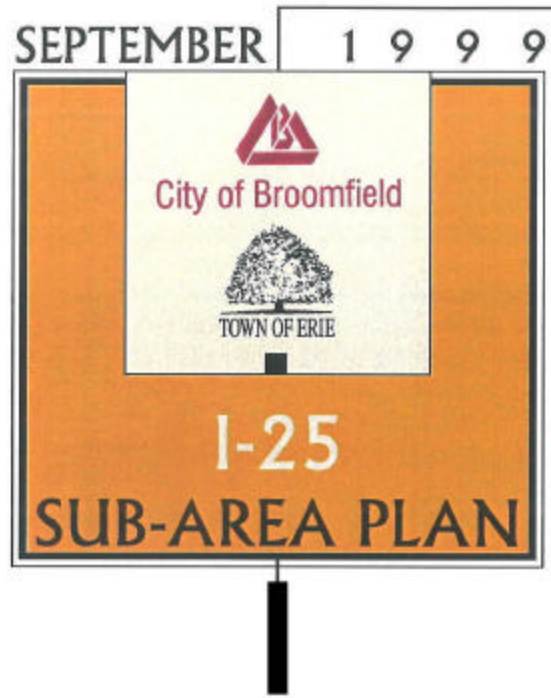
1. Parking for motorcycles should be provided.
2. Parking areas should be clearly distinguishable from automobile parking.
3. Individual spaces should be identified to encourage orderly positioning of parked motorcycles.
4. Parking areas should be located to promote security and visibility.
5. Parking areas shall be paved with concrete to prevent kickstand gouging.
6. Motorcycle parking spaces shall be provided at the following ratio: one motorcycle space for every 40 vehicle spaces, up to a maximum of ten spaces.



USE CURBED LANDSCAPED ISLANDS TO SEPARATE A CHANGE IN DIRECTION OF PARKING STALLS AND AISLES



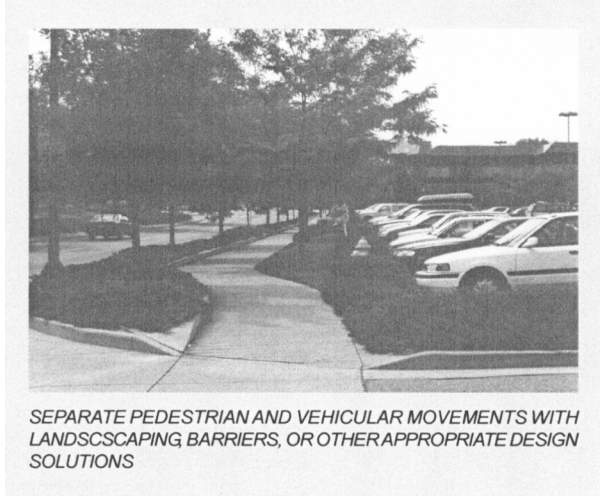
PARKING SPACES MAY BE SHORTENED BY 1.5' WHERE THEY ABUT LANDSCAPED ISLANDS



4

PEDESTRIAN AND BICYCLE CIRCULATION DESIGN STANDARDS

- Overall Pedestrian and Bicycle Circulation
- Pedestrian and Bicycle Connections through Parking Lots
- Accessibility for the Disabled
- Site Barriers
- Bicycle Routes and Bicycle Parking



Goals:

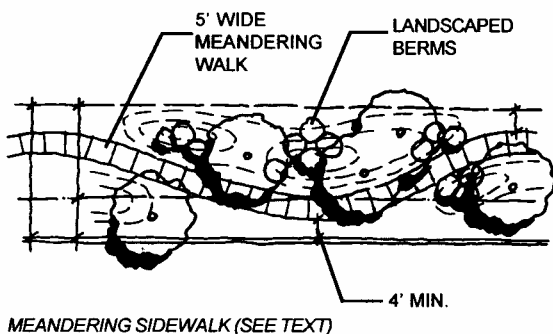
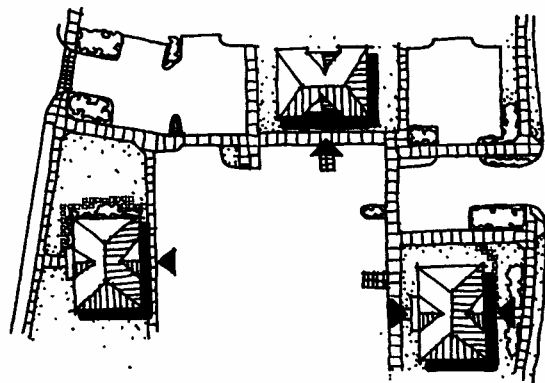
1. Support the I-25 Sub-Area as a pedestrian-oriented environment with provisions to encourage walking for short trips and for access to public transit.
2. Provide a system that allows for the safe and convenient use of bicycles as an alternative mode of transportation.
3. Provide buildings, streets, and parking lots that are scaled to pedestrians with regards to such issues as heights and lengths of walls; height of street lamps; amount of uninterrupted asphalt paving; street widths; distances between crosswalks; pedestrian amenities; and the continuity of shop-fronts.

Overall Pedestrian and Bicycle Circulation

Design Standard:

General

1. Safe and inviting pedestrian and bicycle circulation systems shall be incorporated into all development plans and integrated with the overall community design to form a comprehensive pedestrian and bicycle circulation system that provides convenient access to all portions of the Sub-Area.
2. Sidewalks shall be located and aligned to connect points of pedestrian origin and destination directly and continuously.
3. Major sidewalks shall be minimally 8 feet wide, and minor walks shall be minimally 5 feet wide.
4. Sidewalks shall be detached from all arterial, connector, and local public streets, and shall incorporate adjacent, landscaped "park strips" that are minimally 6 feet wide. (If the appropriate sidewalk and "park strip" width cannot be accommodated within the public ROW, a sidewalk easement shall be required).

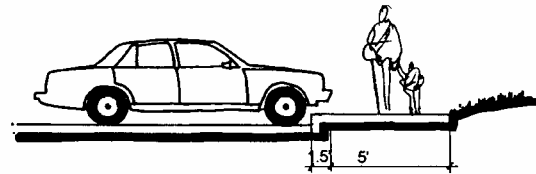


Commercial

1. Buildings shall be located and on-site circulation designed to minimize pedestrian-vehicle conflicts-Plans should provide for the separation of pedestrians and vehicles with landscaping.
2. Areas where vehicles interface with pedestrians and bicycles should be delineated with pavement accents and signage.
3. Attached sidewalks are permitted adjacent to internal circulation aisles, the fronts of parking spaces, and designated drop-off areas.
4. Pedestrian walkways on the north side of buildings, where ice build-up occurs, should be minimized.

Traditional Neighborhood Development Commercial

1. Streets and sidewalks associated with Traditional Neighborhood Development (TND) commercial projects should be minimally 25 feet wide, and designed to accommodate pedestrians while projecting an appropriate "Main Street" image.



SIDEWALKS SHOULD BE WIDENED BY 1/5' WHERE ATTACHED TO HEAD-IN PARKING STALLS

Pedestrian and Bicycle Connections through Parking Lots

Design Standard:

Commercial

1. Bikeways and pedestrian sidewalks should be separated and buffered from external and internal automobile circulation within parking lots.
2. Sidewalks should be designed to lead pedestrians from parking areas to building entrances conveniently and with minimal conflicts with automobiles.
3. Clearly defined pedestrian sidewalks should be provided between buildings.



PROVIDE CLEAR, CONVENIENT PEDESTRIAN ROUTES THROUGH PARKING LOTS

4. Pedestrians should not be required to cross designated drive-through's or service drives to gain access to building entrances.

Accessibility for the Disabled

Design Standard:

General

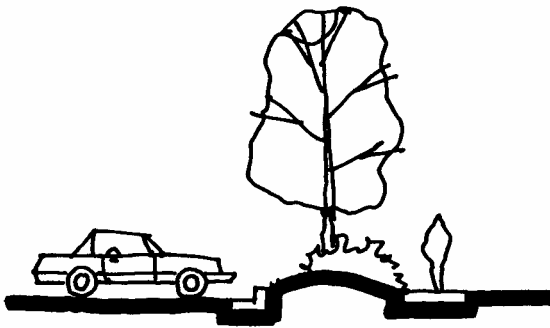
1. All developments shall be equally accessible to able and disabled persons. All developments are expected to meet or exceed requirements of the Americans with Disabilities Legislation and Fair Housing Act, and all amendments thereto.

Pedestrian/Vehicular Buffers

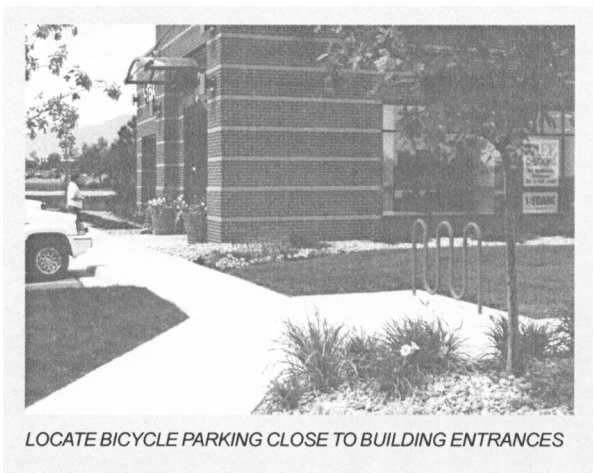
Design Standard:

General

1. Buffers and berming should be used to separate vehicular traffic from pedestrian and bicycle movements for safety and aesthetic purposes.
2. Typical suitable buffers include: fences, walls, curbs, bollards, low shrubbery, and berms.
3. Alternatives to conventional buffers may include: changes in levels between sidewalks and the surrounding area; installing benches, seating walls, bike racks, or raised planters along the edges of designated pedestrian/bicycle circulation routes to discourage cross-cutting.
4. Buffers should be designed as visual assets to developments. Excessive numbers and types of buffers will not be allowed.



USE LOW WALLS AND BERMS TO SEPARATE PEDESTRIAN AND VEHICULAR TRAFFIC



LOCATE BICYCLE PARKING CLOSE TO BUILDING ENTRANCES

Bicycle Routes and Bicycle Parking

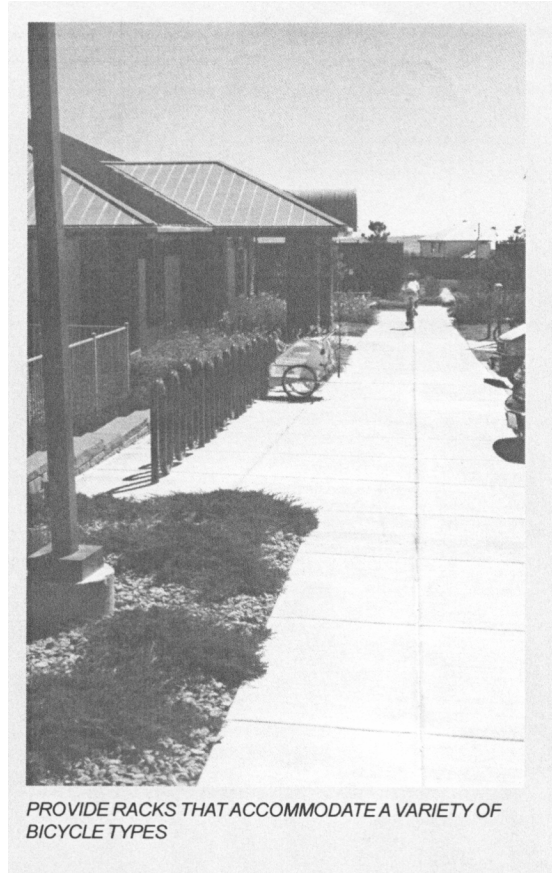
Design Standard:

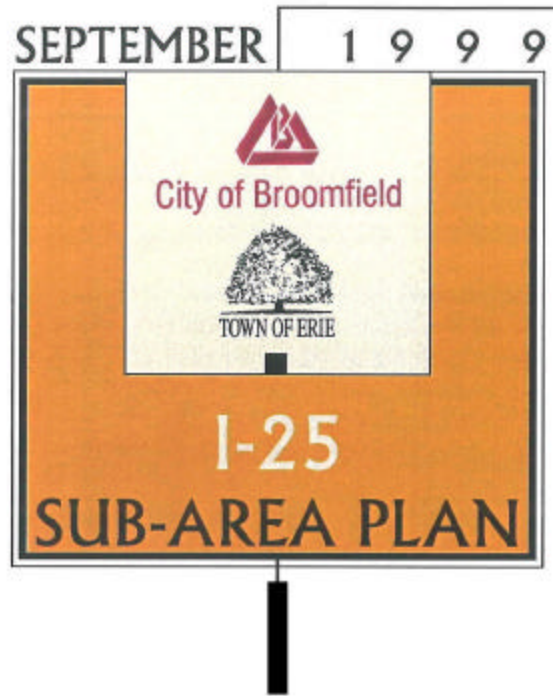
General

1. To encourage the use of alternative transportation modes, functional and attractive bicycle routes and bicycle parking should be provided in convenient locations accessible to both patrons and employees.
2. Regional on-street commuter bicycle lanes are not allowed on freeways, but shall be required along all arterials and collector roadways.
3. An inter-connected network of bicycle lanes shall be part of each developer's required site improvements.
4. Regional bike trails should be designed to traverse individual developments creating a "recreational" bikeway /pedestrian system that is linked to municipal routes.

Commercial

1. Lighted bicycle parking spaces that are convenient and highly visible shall be provided adjacent to customer and employee building entrances.
2. Bicycle parking spaces shall be provided at the minimum ratio of 1 space for each 20 required off-street automobile parking spaces, up to a total of 50 spaces.
3. Quantities and locations of bicycle parking spaces for projects over 200,000 square feet gross leaseable area GLA, shall be addressed in the required comprehensive pedestrian/bicycle circulation plan.
4. Developers should make provisions to protect bicycles from the elements.
5. Bicycle racks should accommodate a variety of sizes and types of bicycles and bicycle locks.





5

TRANSIT DESIGN STANDARDS

- Overall Transit Standards
- Transit Roadway Standards
- Boarding Areas

Goals:

1. Provide a circulation system that allows for efficient transit service within the 1-25 Sub-Area.
2. Orchestrate development patterns to promote maximum opportunity for implementation of transit facilities and other alternative forms of transportation.
3. Promote development in areas which can readily be served by public transit and which are within convenient walking distance of major commercial and employment centers.

Overall Transit Standards***Design Standard:*****General**

1. All development parcels within the 1-25 Sub-Area shall be accessible and serviceable by transit.
2. Pedestrian-oriented design features (e.g., transit shelters; bus pull-outs; transit terminals) should be used to support and encourage transit patronage and to ensure that boarding areas are well-integrated into site plans.
3. All major 1-25 Sub-Area roadways (arterials) shall be designed to accommodate transit vehicles.

Transit Roadway Standards***Design Standard:*****General**

1. Parkway, collector corridors, and principal access roadways shall be designed to enable circulation by regional transit vehicles (40 FT to 45 FT in length).
2. A minimum vertical clearance of 16 feet six inches shall be provided to accommodate transit vehicles.

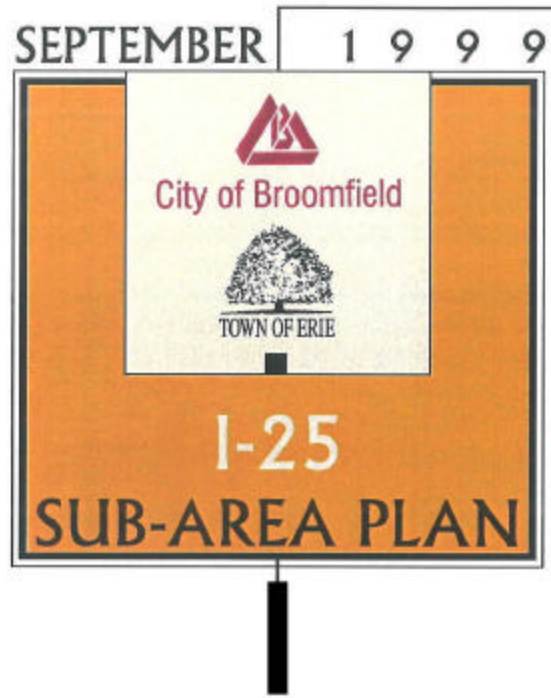
3. The design of raised pedestrian crossings shall be coordinated with the RTD.
4. A minimum simple curve radius of 35 feet shall be provided at all intersections.

Traditional Commercial

1. Corner radii associated with streets located within Traditional Commercial developments shall be 25 feet.

Boarding Areas***Design Standard:*****General**

1. Bus stops shall be located at the far side of signalized intersections to minimize conflicts between motor vehicles, pedestrians, and buses.
2. Mid-block pedestrian crossings, coupled with transit boarding areas, may be used in locations where intersections are located far apart.
3. All boarding areas shall be designed in consultation with the RTD in a manner consistent with the "Creating Livable Communities" handbook published by (and available from) the RTD.



6

ARCHITECTURAL DESIGN STANDARDS

- Building Relationships and Compatibility
- Building Heights
- Building Massing, Forms, and Pedestrian Scale
- Roof Forms and Materials
- Building Materials and Colors
- Building Entrances
- Service Entrances and Loading Areas
- Energy Conservation Measures

Goals:

1. Promote architecture which is well designed and coordinated to complement the architectural heritage of Colorado, create an attractive physical setting, foster a sense of place, and enhance the image and quality of life in the City of Broomfield.

Building Relationships and Compatibility

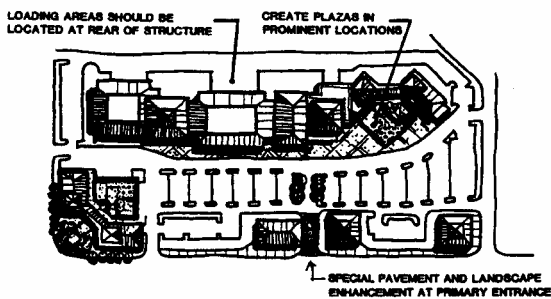
Design Standard:

General

1. All buildings within a development should relate visually and physically to one another, and be compatible with existing buildings on adjacent sites.
2. Orient new buildings so they preserve desired views from existing or proposed buildings.
3. Orient buildings to each other so they shape meaningful pedestrian plazas and open areas.
4. Use creative architectural solutions where major topographic differences occur with special consideration given to mitigating potential negative impacts.
5. Strengthen compatibility by relating new buildings to existing adjacent buildings. New buildings should relate to neighboring buildings in terms of height, setback, orientation, mass, details, window forms, roof forms, materials, textures, and colors.

Commercial

1. The building configuration of structures located in commercial developments should balance pedestrian and auto comfort, visibility, and accessibility. While anchor stores may need to orient to a roadway or parking lot, smaller shops should orient to pedestrian "Main Streets" and urban open areas (e.g., courtyards, greens, plazas, and squares).
2. The spatial structure of commercial buildings is one of the most important factors in the



ORIENT BUILDINGS TO EACH OTHER SO THEY CREATE MEANINGFUL PEDESTRIAN PLAZAS AND CORRIDORS

design of commercial developments because it establishes the overall scale and character of the commercial center. Spatial structure is established by the size and location of buildings, open space, and parking lots. The arrangement of these elements within commercial developments should create a spatial structure that has an intimate, personal, human-scaled quality.

Traditional Commercial

1. Commercial storefronts, when possible, should address the street and sidewalk incorporating such features as storefront windows, recessed entries, sign bands, awnings/canopies, and transom windows which help create a safe, pleasant, and human-scaled shopping environment.
2. Commercial building intensities, orientation, and massing should promote a "Main Street" image characterized by buildings that frame the street.
3. Human-scaled details in architecture are encouraged.
4. Parking should be placed behind Traditional Commercial buildings. Buildings should orient towards the street.
5. Clustering of buildings is encouraged to form enjoyable, pedestrian-scaled urban open area characterized by courtyards, greens, plazas, and squares, that reinforce the "Main Street" image.
6. Buildings should be clustered in groups of two or more around formal open space amenities forming enclosures or "outdoor rooms".
7. Individual stand-alone satellite buildings are strongly discouraged in Traditional Commercial developments.

Single Family Residential

1. The placement of single family dwellings and garages close to or back from the street (staggering) creates different spatial relationships and patterns of open area and shall be encouraged.

2. In higher density single family residential neighborhoods, dwellings should be located close to the street creating enclosure, ultimately framing the streetscape.
3. Varying lot widths between adjoining homes that results in creating a variety of front yard types, shall be encouraged.
4. Side entrance garages should be encouraged to break-up the monotony of garage doors being placed parallel to the street.
5. Rear loaded garages, either attached to the dwelling or detached, that gain access from a rear alley shall be encouraged.

Multi-Family Residential

1. The clustering of multi family attached units should be encouraged to preserve open area and create meaningful areas for courtyards and patios.
2. Multi-family recreation buildings, clubhouses, and lease offices should be sited at the end of access drives creating a series of landmarks that help orient residents and visitors.
3. Multi-family residential structures shall be composed of a series of themed, varied wall planes designed to promote variety and visual interest shall be encouraged.

Building Heights

Design Standard:

General

1. Building height should be sensitive to adjacent open spaces designed to: allow maximum sun and ventilation; provide protection from prevailing winds; enhance views of the natural setting; and minimize obstructions of views from adjoining structures.
2. Building heights should vary, especially along the perimeter of developments. Buildings should step-up in height as development is

located further away from major arterials and collectors.

3. Provide a transition in height between new and existing development.
4. In general, use the following building heights and categories. (dependent upon site characteristics and neighboring uses):
 - High Tech Research & Development:
Two (2) to six (6) stories
 - Corporate Campus:
Two (2) to twelve (12) stories
 - Corporate Offices:
Two (2) to ten (10) stories
 - Professional Offices:
One (1) to six (6) stories
 - Light Manufacturing, Aviation and Distribution:
One (1) to four (4) stories
 - Commercial/Retail/Hotel:
One (1) to thirteen (13) stories
 - Multi-Family Residential:
One (1) to ten (10) stories
 - Transit Stations:
One (1) to eight (8) stories
 - Single-Family Residential:
One (1) to two (2) stories



Building Massing, Form, and Pedestrian Scale

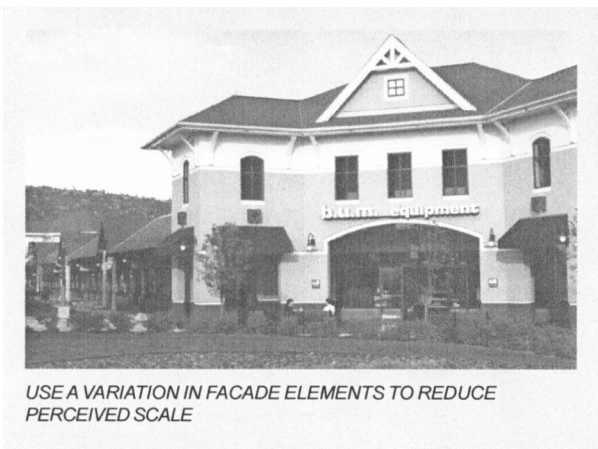
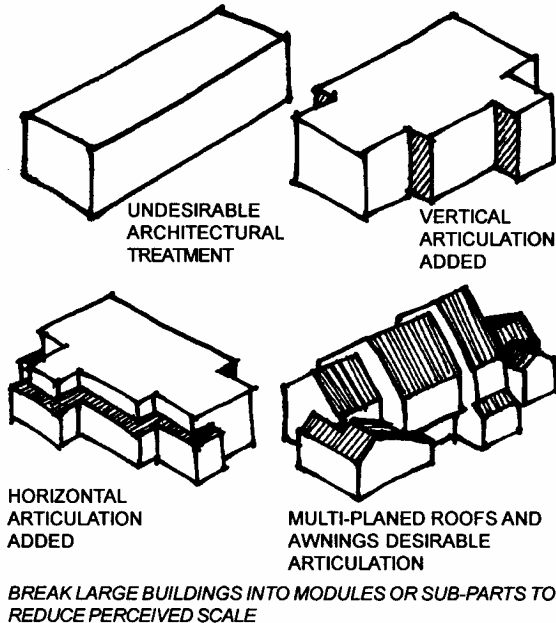
Design Standard:

General

1. Buildings should relate to the natural and human-made environment.
2. Buildings should appear to be built upwards from an aggregation of subordinate volumes. Larger masses should be located at the centers of building compositions, with smaller forms stepping down and outwards.
3. Large, square, or rectangular "box-like" structures shall be avoided .
4. The exterior character of all buildings should enhance pedestrian activity in their immediate vicinities. Buildings shall have architectural features and patterns that provide visual interest at the pedestrian scale which help to reduce building mass and provide local architectural character.
5. Perceiving the scale of a building in human dimensions is important in terms of a pedestrian's ability to relate to it comfortably.. Facades constructed with high levels of visual interest are encouraged
6. Building mass should be modulated to achieve a small human-scaled image by subdividing large volumes into smaller components.
7. Step downs and building setbacks should emulate the terrain reinforcing the natural contours of the site.
8. Variation in roof forms, materials, and height of roof elements are encouraged to reduce perceived scale.

Commercial

Reduce the mass of commercial structures by expressing the floor levels, particularly entries, on the exterior elevations.



1. Wall planes should not run in a continuous direction for more than 40 feet without an offset or other design element (e.g., windows, trellises, articulated walls, arcades, material changes, awnings) that provides variety and visual interest.
2. Large scale buildings over 500,000 GLA can accommodate larger wall surfaces if visual impacts are mitigated through landscaping or other methods.
3. Avoid blank walls at ground-floor levels. Architectural features such as columns, pilasters, canopies, porticos, awnings, brackets, or arches should be included to create an interesting, inviting streetscape for pedestrians.
4. Avoid locating walkways where users will be subjected to harsh environmental conditions. Covered walks, colonnades, and arcades are encouraged.

Single Family Residential

1. Within single family residential neighborhoods, building massing, form, and pedestrian scale play key roles in creating design diversity. The articulation of building mass and form adds richness and scale, and provides a foundation for visual interest and variety within the streetscape. The integration of roof elements, building forms, and design accents on building walls can help soften the architecture and provide visual interest and relief.
2. A single family home's profile should start low at the edges of the house and mass towards the center. The upper story should appear lighter (with less bulk) than the lower story.
3. Homes should incorporate single-story building elements such as roof skirts, covered porches, and building projections on the front and rear elevations in order to reduce building mass.
4. Rear elevation walkout homes should be softened by the use of building projections, one story building elements, roof skirts, decks, and covered porches.

Multi Family Residential

1. Because multi family projects are usually taller than one story, their bulk and scale can impose on surrounding uses and pedestrians. The scale of multi family projects should be considered within the context of their surroundings. Structures with greater height may require additional setbacks so as not to dominate the character of the residential neighborhood.
2. Separations, changes in wall plane and height, and the inclusion of building elements such as balconies, porches, arcades, dormers, and cross gables mitigate the barracks-like quality of flat walls of excessive length.
3. Extremely long multi family structures, if they are appropriately articulated, may be acceptable; however structures (including garages and carports) exceeding 100 feet in length are generally discouraged.

Roof Forms and Materials

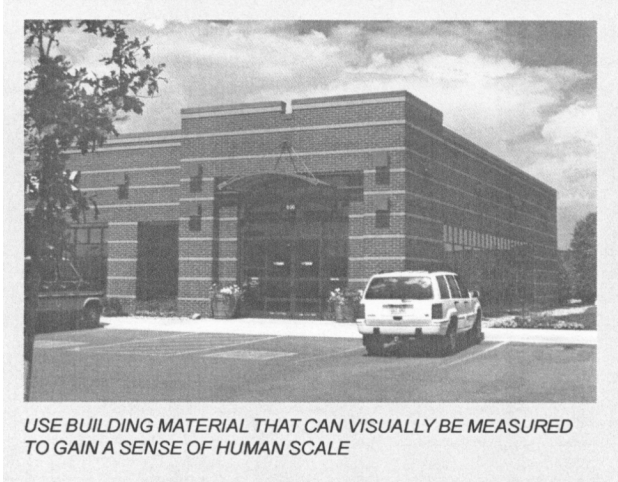
Design Standard:

General

1. Rooftops should contribute to the visual continuity of each development and should be considered as design elements seen from various viewpoints (e.g., at ground level, from other buildings, and from adjacent streets).

Commercial

1. Mixing roof forms on buildings creates variety in the "roofscape". Avoid roof lines running in continuous planes. Flat roofs shall not be encouraged
2. Offset or jog roof planes to add visual interest, reduce the scale and break up long, continuous roof lines.
3. The use of high quality, durable, roof materials shall be encouraged. The use of concrete tile and standing-seam metal are appropriate roof materials for commercial developments.



4. Conceal roof top mechanical equipment from public view. Roof top mechanical equipment should be architecturally integrated through the use of durable metal screens, roof parapets, and sloped roof forms.
5. Design roof forms to correspond to, and denote, building elements and functions such as stair wells, towers, rotundas, entrances, and arcades.
6. Roof forms, whether hipped or gabled, should relate to adjacent buildings or developments.

Single Family Residential

1. A visible main body roof form should be used in conjunction with complementary minor roof forms and elements.
2. Minor roof elements such as gable ends and dormers should be proportional to the spaces they cover and to the overall roof size and form.
3. Single family residential roof materials should reflect the architectural style of the home. traditional building materials which reflect Colorado's rich architectural heritage such as composition, slate, and standing seam metal are encouraged.

Building Materials and Colors

Design Standard:

Commercial

1. Exterior materials and colors should be aesthetically pleasing, of high quality, and compatible with materials and colors of adjoining structures.
2. Visual continuity in major building materials is desired throughout a commercial development consisting of multiple buildings.
3. Reflective materials such as bright aluminum and glass as the primary building material shall be discouraged. Mirrored glass shall not be allowed.

4. Select a single, dominant building material and minimize the number of accent materials. Use the same materials and colors on all elevations of a building.
5. Use heavier materials such as natural stone and masonry materials on the lower portions of buildings to help visually anchor them to the ground.
6. High quality, low-maintenance materials are encouraged. Select building materials that will age with grace.
7. Utilize a simple palette of color and texture in the selection of exterior materials. Use natural, earthen materials manufactured in units measurable in human proportions. These include:
 - Masonry, brick, and cut stone used in their natural state.
 - Textured concrete and architectural block.
 - Wood should be discouraged as a cladding material. However, the use of wood trusses, beams, posts, and brackets, shall be encouraged if integral to the architectural style of the building.
 - Stucco (exterior plaster) modulated in jointed patterns. Thick stucco applications such as "Spanish Lace" shall not be allowed.
 - Textured pre-cast concrete (e.g., ribbed, exposed aggregate, sandblasted).
8. Choose color combinations for new buildings that are compatible with colors used on adjacent structures.
9. Avoid large applications of unfamiliar materials or bright colors, (including bright white) that may streak, fade or generate glare.
10. While subdued or muted colors generally work best as a dominant, overall color, a bright or primary color can also be appropriate for accent elements, such as door and window trim, and architectural details.



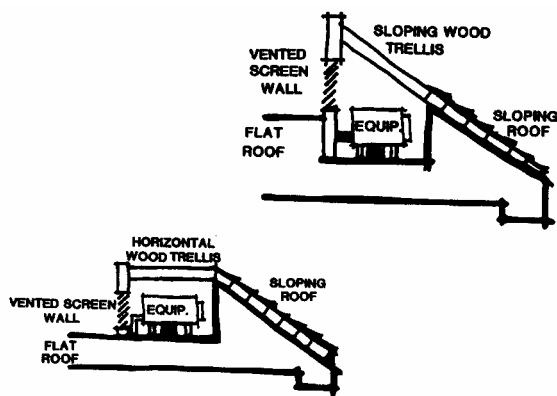
MIX ROOF FORMS TO CREATE VARIETY IN THE "ROOFSCAPE"

Single Family Residential

1. Use natural building materials with strong textures and rich colors, such as cut stone, washed river rock, brick, smooth stucco (exterior plaster) clapboards, shingles, and board and batten.
2. Homes should use heavy, visually solid foundations, transitioning upwards to lighter materials. Masonry materials should create depth and visually complement the home.
3. Exterior materials and colors underscore the perceived value of a home. Single family homes should be finished with deep, rich, earth-tone colors that reflect the environment.

Multi Family Residential

1. The choice of materials related to multifamily developments should represent the chosen style of architecture. Like single family homes, multi family developments should employ an variety of materials in such a way that they do not appear simply added.
2. Greater color variety can be achieved in each development through a variety of body colors as well as variety of detail and trim color. Materials should be chosen which promote Colorado's rich architectural traditions which include:
 - Foundations - cut stone, river rock, and brick;
 - Facades - clapboards, board and batten, shingle siding, and smooth stucco (exterior plaster); and
 - Roofs - shakes, composition roofing, and standing seam metal.



SCREEN ALL ROOF EQUIPMENT WITH MATERIAL CONSISTENT WITH THE MAIN STRUCTURE

Building Entrances

Design Standard:

Commercial

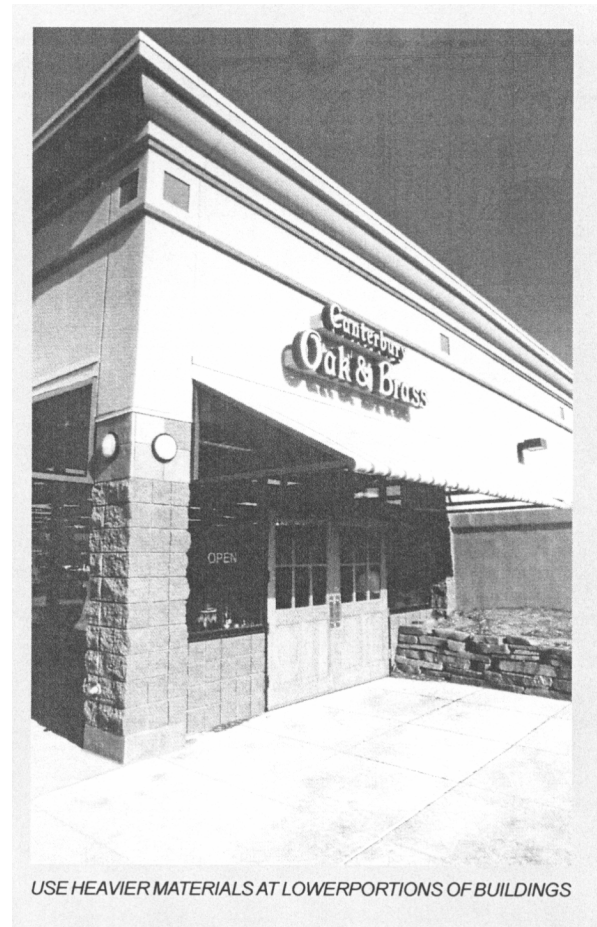
1. Primary building entrances should be easily

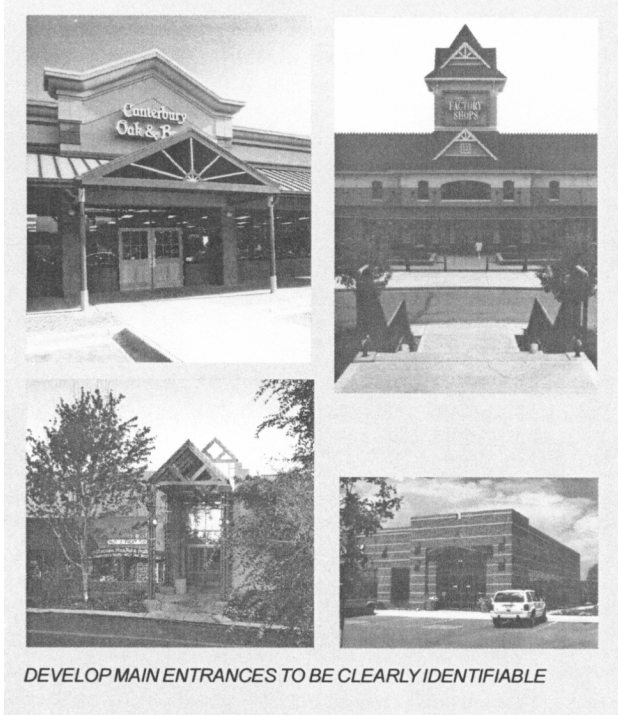
identifiable and relate to human scale.

2. Building entrances should be clearly identifiable from the street, drive aisle, or drop-off area.
3. Design building entrances to contrast with the surrounding wall plane.
4. Design building entrances as a transition from the public realm to the private realm.
5. Primary building entrances shall be designed to be accessible to the handicapped without the use of complex ramp systems.
6. Building entrances shall be illuminated.

Single Family Residential

1. The location and size of single family home entries affects the orientation of residences. Orienting homes to side or back yards rather than streets minimizes activity along the street and minimizes the opportunity for informal surveillance.
2. Minimal entries, or locating entries so that they are not seen from the street creates a bland street facade and minimizes activity on the street by removing the pedestrian activity associated with the home's front door, and shall be discouraged.
3. Covered entries and porches are strongly encouraged on the front street facing facade to provide a transition from the public the private realm.
4. On comer lots, covered entries and porches should be oriented to street corners.
5. Covered entries and porches should be of human scale and integrated into the architectural fabric of the home, softening the building facade, and acting as a transition to larger scaled building components and outdoor living areas.





Multi Family Residential

1. The incorporation of covered entries and porches within multi-family structures is encouraged for both practical and aesthetic purposes. These elements should be architecturally integrated to break up large multi family building masses, create facade articulation, and add human scale to buildings.
2. The use of long common exterior balconies and corridors that require circulation past unit windows is strongly discouraged. Instead, building entrances should be clustered in groups of four or less incorporating private patios, balconies, and landings, enhancing privacy.
3. The use of distinctive architectural elements such as covered porches, entrance porticos, and covered entries to denote building entrances is strongly encouraged.

Service Entrances and Loading Areas

Design Standard:

Commercial

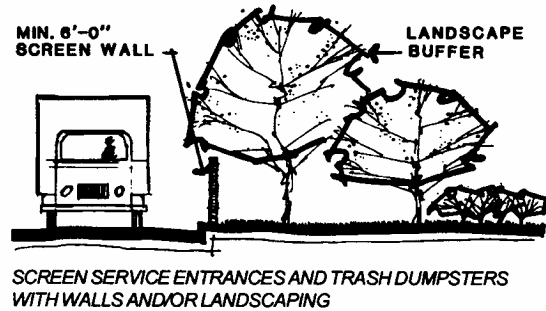
1. Service areas should be visually unobtrusive and harmonize with the architectural style of the building.
2. Orient service entrances, loading docks, waste disposal areas, and similar uses toward service roads and away from streets.
3. Screen service areas with decorative walls and/or landscaping.
4. Utilize shared service drives when feasible.
5. Avoid placing service areas where they will be visible from adjacent buildings or where they will negatively impact view corridors.

Energy Conservation Measures

Design Standard:

General

1. Efforts to conserve energy and other natural resources shall be required in the design of each building.
2. Local climate conditions afford the opportunity to take significant advantage of passive and active solar energy applications. Buildings should be designed and sited to maximize the use of solar gain for energy savings, and respect the solar access requirements of adjacent (existing and proposed) buildings.
3. Energy conserving techniques to be considered shall include, but are not limited to the following:
 - Building shape, mass, orientation and placement. Orient buildings to take advantage of the prevailing summer winds and to buffer against adverse winter winds
 - Clustering buildings
 - Types of materials, and their insulation characteristics.
 - The arrangement and design of windows and doors.
 - Direct solar or photovoltaic energy.





7

LANDSCAPE AND IRRIGATION DESIGN STANDARDS

- Perimeter Landscaping Adjacent to Public and Private Roads
- Perimeter Landscaping Adjacent to Abutting Property
- Parking Lot Landscaping
- Building Site Landscaping
- Landscape Irrigation/Water Conservation
- Landscape Standards and Plant Material Selection/Plant Size Standards
- Landscape Maintenance and Replacement
- Existing Vegetation
- Wall and Fence Design Materials
- Screening Requirements

Goals:

1. Promote the use of landscape elements that contribute to the overall visual appearance of the I-25 Sub-Area.
2. Promote the use of plant materials to separate functional uses and create exterior spaces such as courtyards, greens, squares, and plazas.
3. Provide landscape treatments that reinforce the circulation system.
4. Promote the use of plant materials to modulate harsh climatic conditions.
5. Promote the use of native, drought-tolerant plant materials that optimize water conservation.

Perimeter Landscaping Adjacent to Public and Private Roads

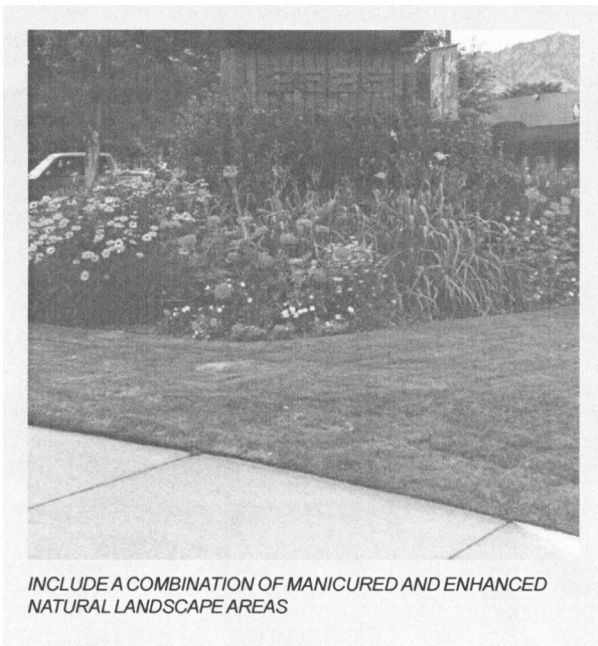
Design Standard:

General

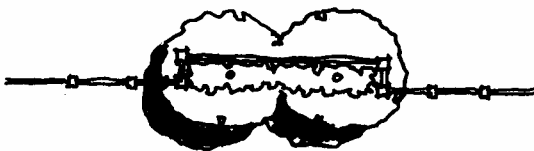
1. Roadway corridors throughout the I-25 Sub-Area shall provide a visually cohesive landscape image.
2. Similar landscape treatments should be used at all entrances and intersections.
3. Plant materials, massing, spacing, and height characteristics should complement the hierarchy of roadways. Planting and grading should work together to create a variety of experiences along the roadway that accent open space amenities.
4. The following landscape treatments should be incorporated for these site conditions:

Entries:

- Provide formal landscape treatments at entries along the edges of perimeter roadways.



INCLUDE A COMBINATION OF MANICURED AND ENHANCED NATURAL LANDSCAPE AREAS



CREATE LANDSCAPE POCKETS IN FENCES AND WALLS WHERE POSSIBLE

- Integrate plant materials with entry monumentation. Plantings should frame or provide a visual base for entry signs.
- Entries should be designed to provide a minimum of three layers of plant materials, including: shade, evergreen, and/or ornamental trees; shrubs; and annual and perennial flowers and ground covers.

Fences & Walls:

- Long expanses of fence and wall surfaces should be off-set wherever possible to create landscape pockets.

Roadway and Center Median Plantings:

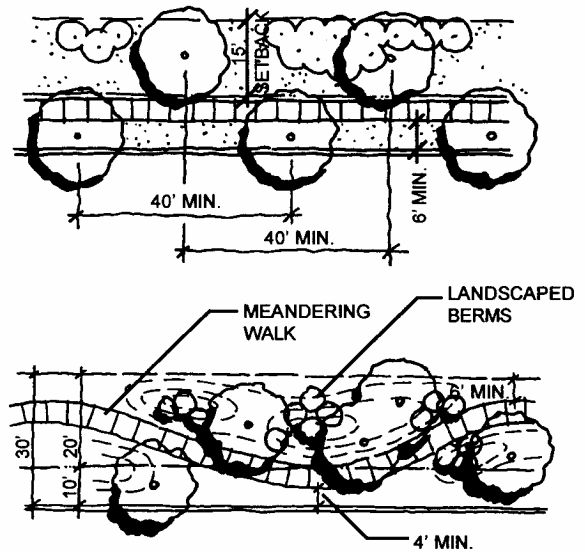
- Informal landscape treatments should be provided along roadways and within center medians, between intersections. Formal landscape patterns should be provided at intersections and development entries.

Detached Sidewalks:

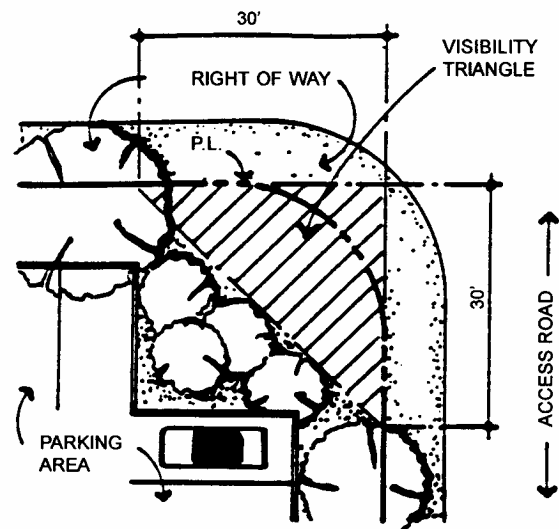
- A minimum of 1 tree per 40 lineal feet of street frontage (average) shall be provided, to be located in the park-strip between the sidewalk and the curb.
- A minimum of 1 tree and 10 shrubs per 40 lineal feet of street frontage (average) shall be provided, to be located within 10 feet of the outside edge of the park-strip (private property).
- A minimum of 1 tree per 40 linear feet of street frontage (average) shall be provided within center medians.
- Required trees may be clustered in informal groupings or planted in formal rows.

Attached Sidewalks:

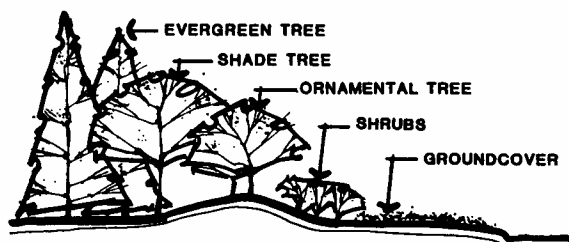
- A minimum of 1 tree per 20 lineal feet of street frontage (average) shall be provided, to be located within 15 feet of the edge of the sidewalk.



LANDSCAPE REQUIREMENT DIAGRAMS - REFER TO CITY OF BROOMFIELD STANDARDS



TYPICAL SIGHT LINES AT INTERSECTIONS



PROVIDE A MINIMUM OF 3 LEVELS OF LANDSCAPE SCALE AT ENTRY DRIVES

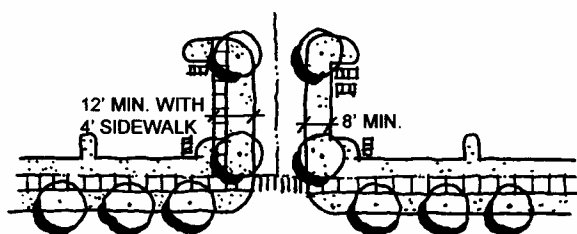
- A minimum of 5 shrubs per tree, including perennial flowerbeds, ground covers, and turf shall be provided, to be located within 20 feet of the curb-face.

Meandering/Undulating Sidewalks:

- A minimum of 1 tree per 20 lineal feet of street shall be required, to be integrated with meandering and undulating turf berms.
- A minimum of 10 shrubs per tree, including perennial flowerbeds, ground covers, and turf shall be provided.

Sight Triangles:

- Sight triangles designed to increase motorist visibility shall be provided at intersections.
- Sight triangles should be landscaped with low-level plant materials that do not interfere with motorists' visibility.
- Within sight triangles, trees should be planted a minimum of 3 feet from the curb-face.



COMMON SHARED ACCESS DRIVES

Perimeter Landscaping Adjacent to Abutting Property

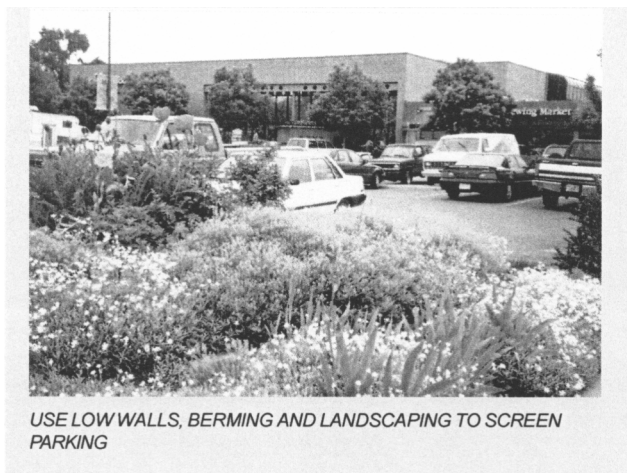
Design Standard:

General

1. Landscape buffers should be provided between similar land uses to promote visual continuity and mitigate potential conflicts between dissimilar uses. The following landscape treatments should be considered:

Perimeter Landscaping Between Similar Uses (e.g., where a large-scaled commercial/retail use abuts a small-scale retail use or office complex):

- A minimum 15-foot-wide landscape buffer shall be located between the

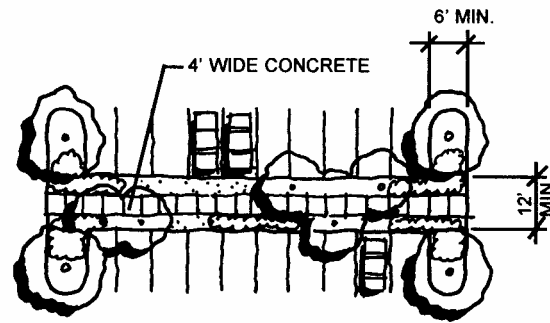


property line and building, and contain the following:

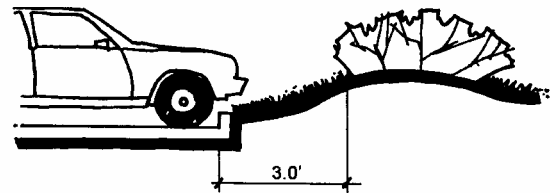
- 1 tree for every 20 lineal feet of property line
- A screen hedge incorporating both deciduous and evergreen shrubs (minimum 3 feet high at maturity), to be planted along 50 percent of the perimeter.

Between Dissimilar Uses (e.g., where a commercial/retail use abuts a residential area):

- A minimum 30-foot-wide landscaped buffer to be located between the property line and building, containing the following:
 - A minimum 3-foot-high berm containing a minimum of 1 tree for every 20 lineal feet of property line.
 - A screen hedge incorporating both deciduous and evergreen shrubs (minimum 5 feet high at maturity) to be planted along 50 percent of the perimeter.



LANDSCAPE MEDIAN AND ISLANDS (SEE TEXT)



SET SHRUBS 3' BACK FROM CURB AT THE FRONT OF HEAD-IN PARKING STALLS

Common/Shared Access Drives:

- A minimum 8-foot-wide landscaped park-strip to be located along both sides of a shared access drive when no sidewalk is included.
- A minimum 12-foot-wide landscaped park-strip to be located along both sides of a shared access drive when a sidewalk is included.

Parking Lot Landscaping

Design Standard:

Commercial, Employment, and Multi-Family Residential

1. Parking lots are necessary features of building sites that can visually detract from the overall development character. Parking lots within the I-25 Sub-Area should blend with each site's character by using landscape plantings and sensitive grading techniques.
2. The use of low, opaque garden walls and/or colorful landscaping combined with berming designed to screen parking from peripheral streets is encouraged.
3. Where practical, the grades of parking lots should be lowered below existing street elevations to minimize visual impacts and promote views to buildings.
4. Parking lots shall be landscaped according to the following criteria:
 - For parking lots accommodating up to 500 autos, 10 percent of the lot shall be landscaped (excluding perimeter landscaping).
 - For parking lots accommodating between 500 and 1,000 autos, 8 percent of the parking lot shall be landscaped (excluding perimeter landscaping).
 - A minimum 1 tree per 10 parking spaces (average equivalent) shall be required in all parking lots, to be planted in islands, medians, and perimeter areas adjacent to lots (excluding streetscape tree plantings).
 - Landscaped islands and medians should be used to define circulation patterns, provide shading of paved areas, and break up continuous rows of parking.
 - Minimum 6-foot-wide landscaped islands should be provided at the ends of parking aisles, and a minimum of 2 shade trees in each island.

- Each island should be planted with a minimum of 8 shrubs, not to exceed 3 feet in height at maturity.
- Landscape medians within parking lots shall be a minimum 12-feet-wide, and should incorporate a 4-foot-wide sidewalk, exclusive of car overhangs.
- When sidewalks are not required in medians, the width of the median may be reduced to 8 feet.
- In parking lots accommodating more than 100 autos, 1 landscaped parking lot median shall be required for every 4 parking aisles.
- A minimum of 1 canopy-style shade tree and 8 shrubs shall be provided for each 30 lineal feet of landscaped parking lot median (average equivalent) Clustering is encouraged.
- The use of landscaped parking lot medians to take-up grade on sloping sites is encouraged (maximum median slope 4:1).

Building Site Landscaping

Design Standard:

Commercial, Employment, and Multi-Family Residential

1. Coordinating landscape design within the I-25 Sub Area for individual development sites and larger, multi-parcel projects is essential for creating a consistent, high-quality character. A cohesive landscape design unifies the various buildings and strengthens the cohesiveness of the development.
2. Landscape treatments related to individual developments shall complement overall perimeter landscape treatments by creating distinctive settings for buildings; reinforcing the design of the open space system; and providing a transition for pedestrians.



EMPHASIZE AND INTENSIFY LANDSCAPE AT BUILDING ENTRANCES, INCLUDING FLOWER BEDS WITH A VARIETY OF PERENNIALS, ANNUALS, GROUND COVERS AND ORNAMENTAL GRASSES

3. Landscaping that is of appropriate scale should be used, and at building entrances should provide focus and accent.
4. Landscaping around the bases of buildings should be provided to soften the edges between buildings and parking lots.
5. Twenty-five percent of each building site shall be landscaped.

Landscape Irrigation/Water Conservation

Design Standard:

General

1. Every effort should be made to conserve water by utilizing alternative means for maintaining a suitable landscape environment. In areas where irrigation systems are used, water conservation should be emphasized through water-efficient systems and plant selections.
2. A "zoned planting scheme" should be used to reduce water demand by grouping similar varieties of drought- and disease-tolerant native plants.
3. The use of blue grass should be limited. When used, heavily-mulched planting beds should be incorporated to help retain moisture and make planting areas easier to maintain.
4. Soil should be improved prior to planting for better water absorption and retention.
5. Efficient, automatic irrigation system should be provided.

Landscape Standards and Plant Material Selection/Plant Size Standards

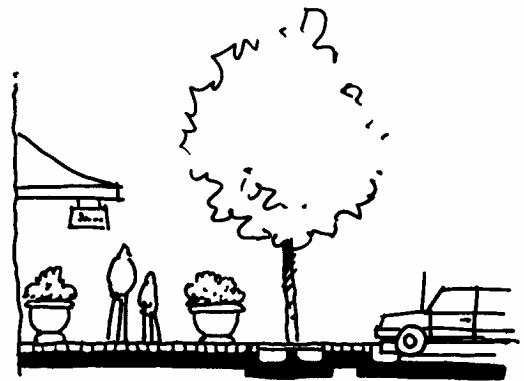
Design Standard:

General

1. For a strong visual impact, plants of the same species should be planted in masses or rows. The random spotting of different plant types is discouraged.
2. Landscape plantings should reinforce formal and informal site planning concepts and compliment architectural forms.

Commercial, Employment, Multi-Family Residential

1. Landscaping associated with commercial, employment, and multi-family uses should be located in one of the following plant zones:
 - High-Maintenance Zone (located at site and building entrances and pedestrian areas), characterized by manicured lawns which require weekly mowing and regular watering; formal plantings of trees and shrubs; and planters containing annuals and perennials.
 - Medium-Maintenance Zone (located along perimeter roadways and at building entrances), characterized by native grasses which require less water and maintenance; large shrubs; and large, specimen trees.
 - Low-Maintenance Zone (located in environmentally sensitive areas, along waterways, and open space areas), characterized by existing vegetation and natural, drought-resistant plant species, including meadow/open fields and wetlands areas.



USE CONTAINERS WITH FLOWERING PLANTS TO ENHANCE SIDEWALK SHOPS, PLAZAS AND COURTYARDS

2. The following design considerations should be taken into account when selecting plant materials:
 - Plant materials should be selected that provide variety and year-round color and screening.
 - To create color, texture and interest, annual and perennial flowerbeds should be planted in visible areas such as pedestrian plazas, building entries, and vehicular entries.
 - Planting beds should be mulched with wood or rock to stabilize soils, control erosion, and conserve water use.

Landscape Maintenance and Replacement

Design Standard:

Commercial, Employment, Multi-Family Residential

1. Property owners shall be responsible for providing, protecting, and maintaining all landscaping in a healthy and growing condition.
2. Property owners shall remove and replace dead or diseased plant materials immediately with the same type, size, and quantity of plant material as originally installed.

Existing Vegetation

Design Standard:

Commercial, Employment, Multi-Family Residential

1. Special attention should be given to preserving significant natural features and vegetation within the I-25 Sub Area. "Significant" is considered to be any vegetation that is unique due to its history,

size, variety, or growth habits. This includes all mature trees greater than 3 inches in diameter and significant under-story plants and shrubs. Specific requirements include the following:

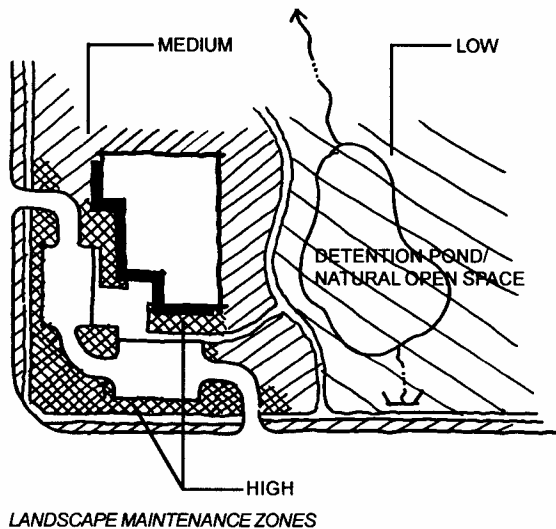
- Buildings, parking lots, and landscape areas should be located to preserve significant natural vegetation.
- Any existing, healthy tree of 3-inch caliper or larger, located more than 20 feet from any proposed building, should be preserved and incorporated into the landscape plan.
- All existing trees over 24 inches in caliper should be preserved, unless unhealthy or unsuitable for preservation.
- During construction of site improvements, suitable protective barriers (generally located beyond the drip line) should be erected around trees to be preserved, to protect trunks, branches, and root structures from damage by construction equipment.
- Tree wells or retaining walls should be incorporated in the landscape plan as needed to protect existing trees.
- Historic drip lines should be maintained.

Wall and Fence Design Materials

Design Standard:

General

1. Fencing and walls should be constructed of materials that are compatible with adjacent architecture.
2. Fencing and walls should be softened with landscape materials, whenever possible.
3. In general, using retaining walls higher than 6 feet should be avoided. When taller retaining walls are required (near pedestrian zones, for example), safety protection measures should be provided in the form of railings, fences, or hedges; or a terrace created with two shorter walls.
4. Architectural treatment shall be applied to both sides of perimeter walls.
5. Long expanses of fences or walls should be broken up with columns, indentations, or changes in wall materials.
6. Walls and fences should be constructed of durable materials such as cut stone, brick, washed river rock, or metal with dark finishes (wrought iron or similar). Barbed wire, razor wire, will not be allowed as a fencing material.



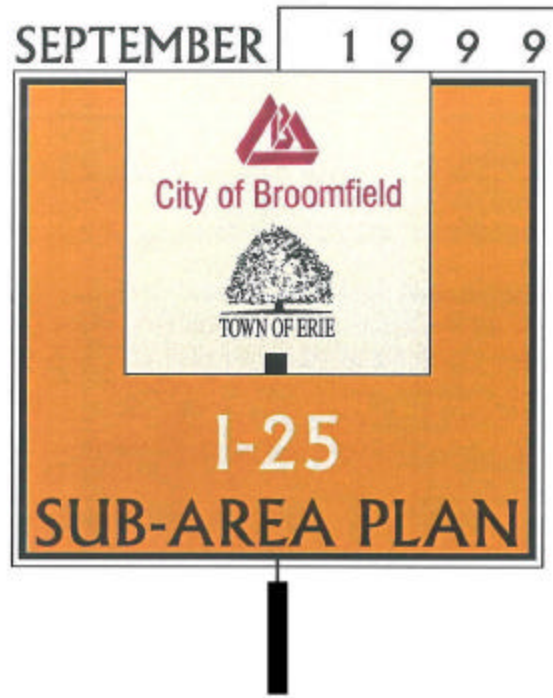
Screening Requirements .

Design Standard:

Commercial, Employment, Multi-Family Residential

1. Screen walls and fences should integrate both physically and visually with building architecture.
2. These walls and fences should be of appropriate height to screen meters, transformers, loading docks, and service areas adequately. Screen walls and fences shall be a minimum 6 feet high, and constructed of durable materials and finishes compatible with adjacent architecture.
3. Outdoor storage will not be allowed. All materials, supplies, trucks, or other equipment shall be contained within a building or stored within a screened compound.
4. All noise pollution and noxious odors shall be mitigated.





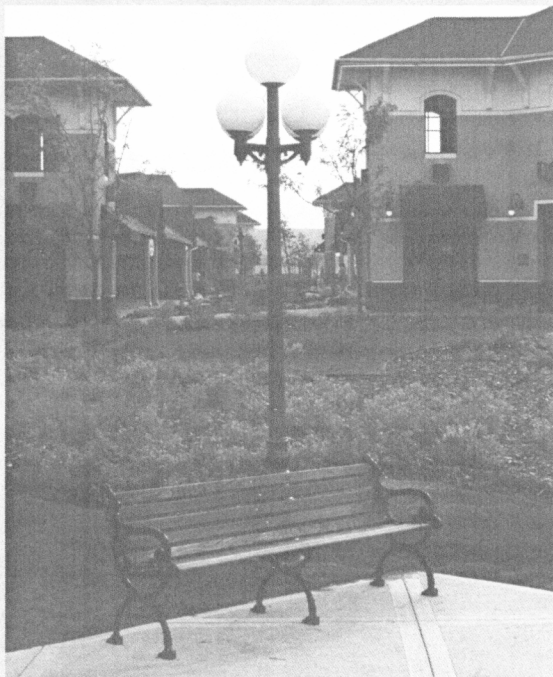
8

EXTERIOR SITE LIGHTING DESIGN STANDARDS

- Fixture Design and Illumination Level
- Decorative Architectural Lighting
- Parking Lot, Pedestrian, Landscape Lighting



LIGHTING SHOULD BE A "FAMILY" OF COMPATIBLE FIXTURES WHICH RELATE TO ARCHITECTURAL CHARACTER.



POLES AND FIXTURES SHOULD BE COMPATIBLE WITH ADJACENT STRUCTURES AND LIGHTING

Goals:

1. Promote the consistent use of exterior lighting fixtures to help create an identifiable image or character within the Sub-Area, its districts, neighborhoods, and individual sites.
2. Promote exterior lighting that provides illumination for the security and safety of entry drives, parking lots, service and loading areas, sidewalks, courtyards, greens, plazas, and squares, without intruding on adjacent properties.
3. Promote exterior lighting that is aesthetically pleasing and complimentary to the architectural styles of buildings, as well as functional.

Fixture Design and Illumination Level

Design Standard:

Commercial, Employment, Multi-Family Residential

1. Exterior light standards should be designed as a "family" of compatible fixtures which relate to the architectural character of buildings located on a site.
2. A minimum level of lighting (lumens) should be established (per City Standards) to accommodate safe pedestrian and vehicle movements, without causing off-site glare.
3. The design of light poles, globes, and arms should be compatible architecturally with adjacent structures and developments.
4. All intersections and perimeter roads within the Sub Area shall be illuminated with similar light fixtures.
5. All lighting fixtures shall be selected and located to shield or confine light-spread within an individual development's boundaries. Light fixtures should be oriented downwards, eliminating ambient skyward light.
6. Security should be assisted by specifying lighting levels (lumens) that are adequate for visibility, though not overly bright.

7. All building entrances shall be lighted.

Decorative Architectural Lighting

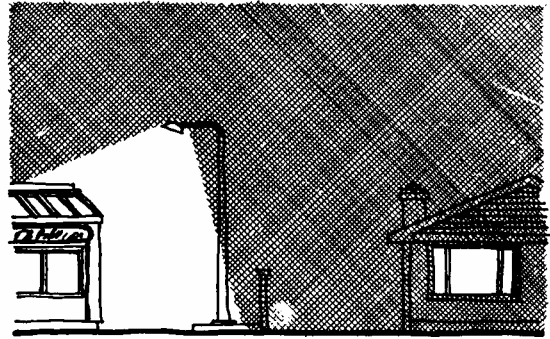
Design Standard;

Commercial

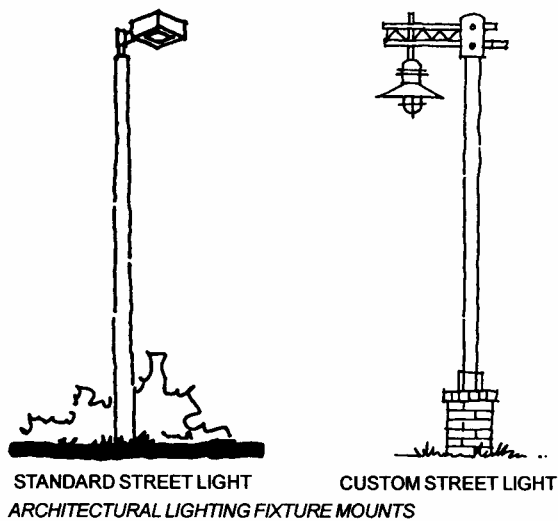
1. Decorative lighting that accents building features and creates visual interest is encouraged.
2. Lighting fixtures mounted directly on structures may be allowed when utilized to enhance specific architectural elements or provide visual interest.
3. Light fixtures that illuminate signage shall be compatible with the architecture of the building on which they are placed.
4. Building entrances, art, terraces, and special landscape features should be considered as opportunities for accent and decorative lighting.

Single-Family Residential

1. Decorative lighting fixtures are encouraged to complement the architectural style of homes. Fluorescent lighting fixtures are not allowed.
2. The design and color of light posts, bollards, and other yard-lighting fixtures should be compatible with the architectural styles of the homes they illuminate, and consistent throughout a single lot.
3. Lighting shall not cause glare, or disrupt the visual environment of neighboring dwellings.
4. Path and step lights, such as "mushroom" and "pagoda" lights are encouraged for point-to-point illumination of pedestrian paths, stairs, and landings.
5. Lighting fixtures should be constructed and mounted to withstand and discourage abuse. Durable, above-ground housing accent lights that are plastic, such as "Malibu" lights, are



SELECT AND LOCATE LIGHT FIXTURES TO CONFINE LIGHT SPREAD



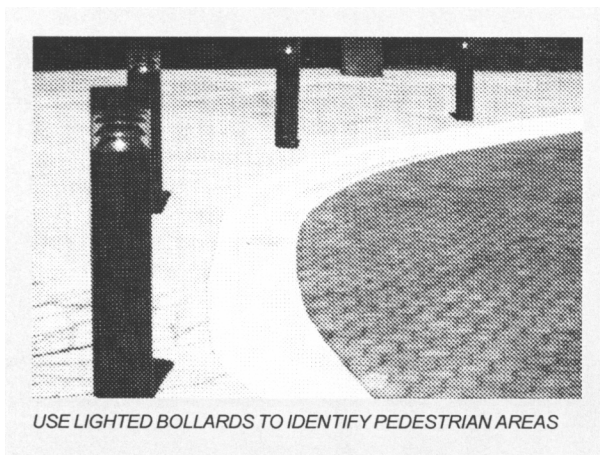
possible choices, as long as electrical connections are placed underground. The use of colored lights, other than as decorative, seasonal lights, is discouraged.

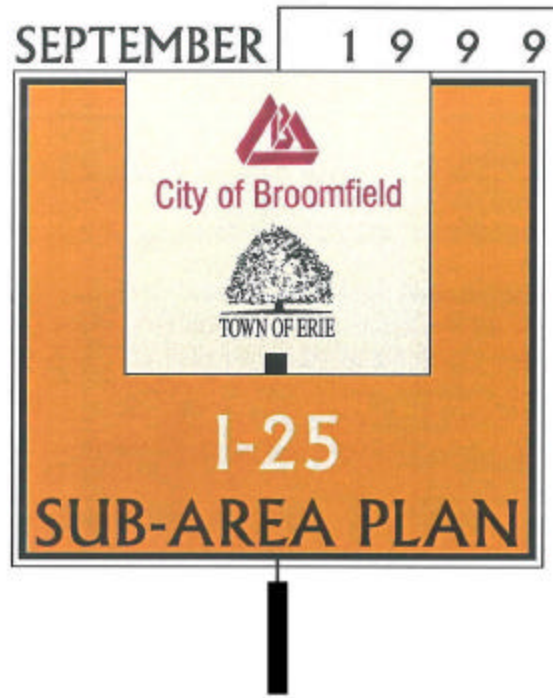
Parking Lot, Pedestrian, Landscape Lighting

Design Standard:

Commercial, Employment, Multi-Family Residential

1. Parking lot lighting should be unobtrusive.
2. Lighting fixtures should be uniform in design and provide adequate lighting for all areas.
3. Metal halide lights are encouraged within parking areas, and shall incorporate "cut-off" devices to prevent glare and "light trespass" onto adjacent buildings and sites.
4. Pedestrian walkways through parking lots shall be lighted.
5. Areas of potential danger or conflict, such as stairs, ramps, intersections, and underpasses, shall be illuminated.
6. Sidewalk lighting shall be scaled to the pedestrian and not exceed 15 feet in height.
7. The use of lighted bollards with incandescent or metal halide light sources is encouraged to identify pedestrian walkways and drop-off areas at building entrances.
8. Landscape lighting is encouraged at project and building entrances.
9. Landscape lighting fixtures should be hidden from view in order to control glare and avoid extreme bright spots on the surrounding landscape. Possible favorable locations include trees adjacent to landscaping, and behind rocks.

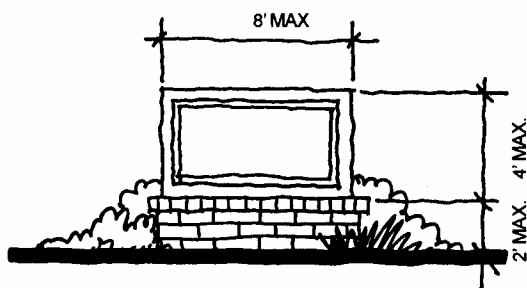




9

EXTERIOR SITE SIGNAGE DESIGN STANDARDS

- Sign Materials
- Sign Shapes and Sizes
- Location/Placement/Visibility
- Sign Illumination
- Allowable Sign Types



MONUMENT STYLE DIMENSIONS

Goals:

1. Promote the use of signage that contributes to the visual continuity of development and is subordinate to architectural and landscape elements.
2. Require that a uniform signage program be established for large developments (200,000 SF GLA), to ensure that signage for individual tenants is consistent in terms of sign locations, layouts, organization, message lengths, typefaces, supporting structures, and compatibility with other signs in the program.

Sign Materials

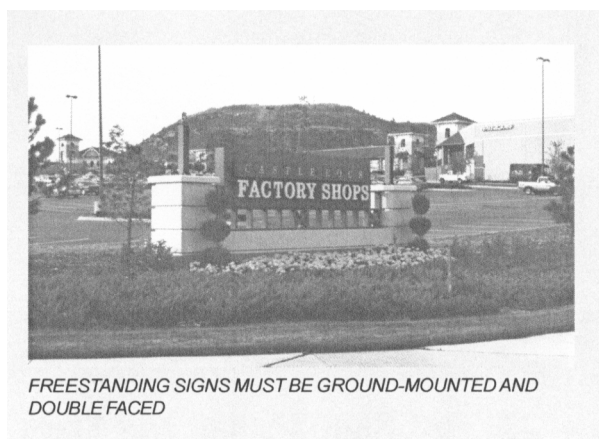
Design Standard:

General

1. Signs shall be designed and constructed of durable, high-quality materials that are consistent with the architectural styles of buildings they serve.
2. Materials and colors should be compatible architecturally in terms of color and design with the buildings they serve.
3. Signs should not detract from the character or aesthetic appeal of the community.
4. Signs should convey their messages simply and in a straight-forward manner.
5. Guild signs, which are characterized by the use of simple shapes and symbols, are encouraged.

Commercial

1. Signs should be of modest size, affording businesses sufficient visibility and identification, without dominating the landscape or interfering with vehicular movements along public streets.
2. Sign sizes shall be consistent with and conform to the City of Broomfield Sign Code.
3. Sign forms should be simple and represent subordinate elements in the landscape.



FREESTANDING SIGNS MUST BE GROUND-MOUNTED AND DOUBLE FACED

The following conditions shall apply to all signage in commercial areas within the Sub-Area:

1. One **freestanding sign** shall be allowed per development, and shall be of a ground-mounted monument type.
2. The sign face of a monument sign shall not exceed 32 square feet.
3. The sign face of a monument sign shall not exceed 4 feet in height.
4. Monument signs shall not exceed 6 feet in height from grade level.
5. The horizontal dimension of a monument sign display area shall be no greater than 8 feet.
6. Wall signs shall not exceed 1 square foot of sign area per lineal foot of building frontage of an individual business.
7. Wall signs shall not exceed a maximum total sign area of 200 square feet per building elevation.
8. One wall sign shall be allowed per street of parking lot frontage, not to exceed 3 per building.
9. If a monument sign is desired in conjunction with a wall sign, the total allowed wall signs is 2.

Sign Shapes and Sizes

Design Standard:

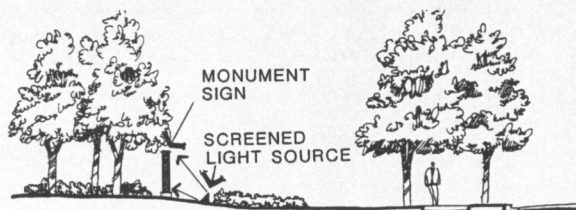
The size of signs should be modest and afford businesses sufficient visibility and identification without becoming a dominant part of the landscape or interfering with vehicular movement along the public streets. Sign size shall be consistent with and conform to the City of Broomfield Sign Code. Sign forms should be simple and act as subordinate elements in the landscape.

The following conditions shall apply to all signage within the Gateway District.





LOCATE MONUMENT SIGNS IN A PLANTER SETTING WITHIN A LANDSCAPED AREA



EXTERNAL LIGHT SOURCES DIRECTED AT SIGNS SHOULD BE CONCEALED FROM PEDESTRIANS' AND MOTORISTS' "LINES OF SIGHT"



USE MONUMENT SIGNS AT THE STREET OR PRIMARY ENTRIES TO PROVIDE PROJECT IDENTITY

One freestanding sign is allowed per development project and must be of a ground-mounted monument type. The display area shall not exceed 32 sf (total per sign) and the vertical dimensions of the monument sign display area shall be no greater than 4 feet with the top of the sign being no higher than 6 feet from grade level. The horizontal dimensions of the monument sign display area shall be no greater than 8 feet. The total allowable area of flush-mounted signs on buildings shall be computed by the following formula: 1 square foot of sign area per lineal feet of building frontage on a street of the individual business, subject to the provisions of the City's Sign Code up to a maximum total sign area of 200 square feet per elevation. Flush mounted signs are limited to 2 building elevations. The maximum number of flush-mounted signs allowed for each free-standing building is 3. If a small monument sign is desired as well, total allowed flush-mounted signs is 2. The exception to this is the provision of sign bands/panels above the store fronts within a cluster of small retail businesses. Use simple, straight-forward shapes that convey the message clearly. Signs as symbols are encouraged because they are easily read and enhance pedestrian interest.

Location/Placement/Visibility

Design Standard:

Commercial

1. Signs shall be located to be visible and legible from roadways and sidewalks without conflicting with safe vehicular or pedestrian movements and visibility.
2. Monument signs should be located in landscaped planters.
3. To avoid obstructing visibility at intersections, monument signs should be located a minimum of 8 feet from the right-of-way.

Sign Illumination

Design Standard:

Commercial

1. Sign illumination should complement building architecture, not overpower it.
2. The use of internally illuminated, individually-cut letters is strongly encouraged.
3. When external light sources are directed at sign surfaces, light sources should be concealed from pedestrians and motorists.
4. Light spill onto adjacent areas should be avoided.
5. Animated signs are not permitted.

Allowable Sign Types

Design Standard:

Commercial

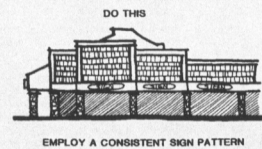
1. In general, signage should reinforce the urban environment of commercial developments.
2. Signs should be designed as a "family," incorporating similar, compatible materials that reinforce the designs and styles of project architecture.
3. The following sign types should be considered within project sites:

Monument Signs:

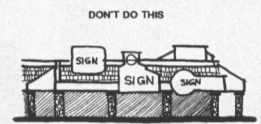
- Monument signs may be located at the street or primary entries to commercial developments to provide overall project identity.
- Small-scale monument signs (less than 20 SF), may be located at primary entries to freestanding office buildings to provide individual business identifications. Such signs should contain only the name or trademark of the identified business.



SMALLER SCALE MONUMENT SIGNS MAY BE LOCATED AT PRIMARY ENTRIES TO PROVIDE INDIVIDUAL BUSINESS IDENTIFICATIONS AND ADDRESSES

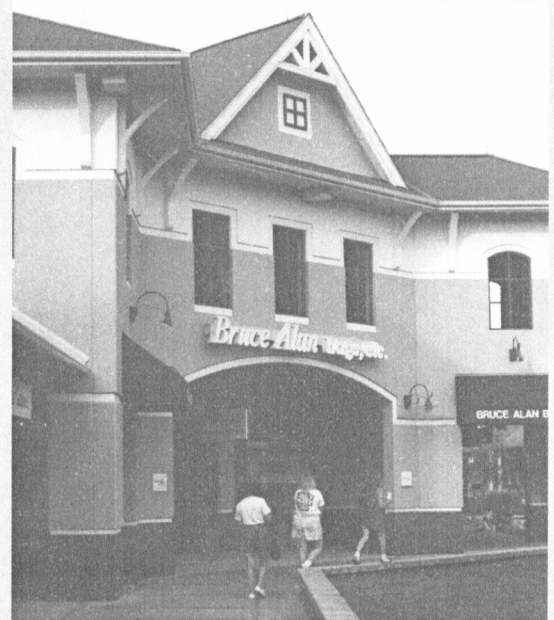


EMPLOY A CONSISTENT SIGN PATTERN



INCONSISTENT SIGN PATTERNS CREATE CONFUSION. SIGNS WITHIN OR ABOVE ROOF AREA ARE PROHIBITED

LOCATE FLUSH-MOUNTED SIGNS ON BUILDINGS AT THE FIRST FLOOR LEVEL ONLY FOR RETAIL AND AT THE SECOND LEVEL FOR OFFICES



FLUSH-MOUNTED



SIGNS THAT PROJECT FROM A BUILDING ARE FOR RETAIL USE ONLY



PROJECTING SIGNS MAY NOT EXCEED 4 SQUARE FEET IN AREA

- Monument signs shall not contain change panels, advertising, or names of individual tenants.
- For multi-tenant developments such as shopping centers or office buildings, monument signage requires that additional variables be considered. Conceptual designs for signs serving these types of facilities shall be submitted to the City of Broomfield Planning Department for review and approval.

Wall Signs:

- In relation to mixed-use projects, wall signs shall be located on the first floor levels of commercial storefronts and at second-floor levels for office uses.
- Wall signs shall only identify the individual business or building complex on which they are located.
- Wall signs may not project more than 8 inches from a building face.

Projecting Signs:

- Projecting signs are allowed for retail and office uses located in multi-tenant retail shopping centers.
- Projecting signs shall not exceed 4, square feet in area.
- Projecting signs shall be located a minimum of 7 feet above finished grade.
- These signs may not project more than 5 feet from a building face.

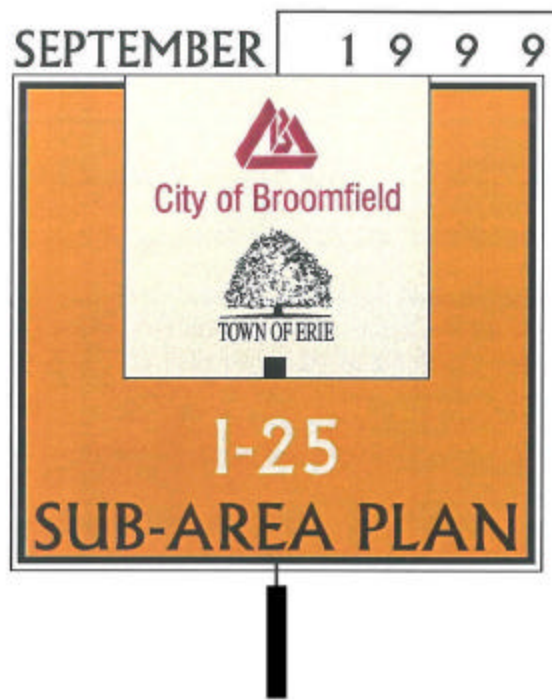
from finished grade.

Freestanding Pole Signs:

- Freestanding pole signs shall be allowed only as traffic regulation and directional signs within development sites.
- Pole signs may not exceed 4 square feet in area and 6 feet in height, measured

Animated Signs:

Animated signs are not permitted.



10

EXTERIOR SITE FURNISHINGS DESIGN STANDARDS

- Required Site Furnishings
- Optional Site Furnishings

Goal:

Promote a visually attractive and coordinated selection of site furnishings, such as trash receptacles, news racks, benches, drinking fountains, bike racks, and tree-grates

Required Site Furnishings**Design Standard:****Commercial - Employment Sites**

1. Major site furnishings include benches, waste receptacles, planters, railings and bollards. In general, visual continuity of these elements is desired throughout the I-25 Sub Area. Outdoor site furniture should be low maintenance and resistant to vandalism.

Outdoor Seating:

- Outdoor seating should be comfortable, attractive, durable and easy to maintain.
- Appropriate locations for benches include major building entryways, passenger drop-off areas, transit stops, and within pedestrian courtyards, greens, plazas, and squares.
- Bench locations should receive direct sunlight and be sheltered from winds in the winter; and shaded in the summer.
- When seating is fixed to the ground, a variety of arrangements should be provided, both linear and grouped, accommodating two-to-six persons.

Planters and Waste Receptacles:

- Planters and waste receptacles should be coordinated with other site furnishings, and of materials and colors similar to those used for benches.

Tree Grates:

- Tree grates should be used to prevent excessive soil compaction and to add visual interest to the pavement.

- Tree grates should be fabricated of strong, non-rusting steel, capable of supporting maintenance vehicles.
- In some heavy use areas, tree guards may be appropriate added protection for young trees.

Trash Dumpsters:

- Trash dumpsters should be located near building service entrances, providing easy accessibility for trash trucks.
- Trash dumpsters should be located away from areas within the public view, such as building entrances, courtyards, plazas, and squares.
- Concrete pads that are minimally 8 feet wide should be provided to support trash dumpsters.
- Whenever feasible, trash dumpsters should be grouped in areas to be shared by multiple buildings and users.
- Trash dumpsters should be enclosed by decorative masonry screen-walls, accessed by solid metal gates.

Bicycle Racks:

- Bicycle racks should be compatible with other site furnishings.
- Bicycle racks should be located in major activity areas within the Sub-Area that are adjacent to walkways and building entrances.

Optional Site Furnishings**Design Standard:****Commercial - Employment Sites**

1. Site furnishings such as newspaper vending machines are not required in all public areas. However, it is important that an attractive and

coordinated system of these amenities be provided.

Newspaper Vending Machines:

- Newspaper and other publication-vending machines in pedestal-mounted racks should be grouped, and sides and rears screened with hedges or walls.
- Vending machine locations should be near activity centers and in principal building entries.
- Pedestal or wall-mounted vending machines should not project into circulation spaces above 27" (above floor level). Projections above this height are a hazard to white cane users.



11

ENVIRONMENTAL SENSITIVITY DESIGN STANDARD

- Sustainable Design
- Environmental Sensitive Development
- Sustainable Design Concepts
- Ecological Image and Perception
- Landscape Mosaic
- Landscape Corridors
- Habitat, Homogeneity, Heterogeneity, and Areas
- Edges
- Wildlife Conservation, Habitat Diversity, and Management
- Solar Radiation and Heat Sinks

Goals:

1. Promote a balance between economic vitality and environmental sensitivity.
2. Promote environmentally sensitive developments, which respect sensitive landforms, plant materials, and animal habitats.
3. Promote the conservation of significant natural resources.
4. Encourage the recycling of renewable resources.

Sustainable Design***Design Standard:*****General**

1. Each development should view environmentally sensitive design challenges as opportunities to create lasting value and real beauty by respecting the natural environment and creatively responding to it, rather than opposing it. Towards that end, the I-25 Sub Area seeks to achieve ecological sensitivity through sustainable design and ongoing environmental programs and maintenance. The application of emerging eco-technologies and environmentally sensitive design will be an ongoing and evolving part of the development approval process within the I-25 Sub-Area.

Environmentally Sensitive Development***Design Standard:*****General**

1. All development shall be required to implement the latest environmental techniques designed to preserve sensitive natural features and ecosystem.
2. All projects shall be required to mitigate

development impacts related to: (1) the preservation of endangered flora and fauna; (2) the conservation of natural resources, (3) the promotion of safe technologies; and the recycling of valuable materials.

3. Developers in the I-25 Sub-Area shall be expected to "take the lead" in implementing and managing sustainable design concepts. Many eco-development programs do not cost more and may even save money in the initial stages.

Sustainable Design Concepts***Design Standard:*****General**

1. To the extent possible and practical each development shall comply with the following sustainable design concepts:
 - Sensitively integrate development into the indigenous landscape, minimizing disturbance to the site and responding to the unique natural patterns (e.g., topography, drainage, wildlife, and vegetation).
 - Design buildings to respond to Colorado's unique climatic conditions, which include snow, wind, rain, and sun.
 - Choose cost effective renewable resources to maximize durability and minimize waste.
 - Eliminate the use of toxic materials.
 - Employ all reasonable ecological equilibrium practices including soils, water, and energy conservation practices.
 - Pursue natural bio-filtration systems in drainageways to purify runoff.
 - Omit toxic emissions and reduce automobile traffic thereby reducing air pollution.
 - Pursue active and passive solar opportunities.

Goal Of Sustainable Development

Forms of economic development and change that do not deplete or degrade the natural resources on which both present and future development growth depend. A central idea of sustainable development is that environmental conservation and management plans must explicitly reconcile present and future needs for resources to sustain economic welfare.

Ecological Image and Perception

Each development should preserve the native prairie character of the high plains by integrating new development into the indigenous landscape.

Design Standard:

- Enhance opportunities for positive interactions with wildlife by providing developments that are required to include facilities that enable interaction with the natural world. These interpretive facilities should be developed in relation to exemplary habitats in order to view, study, and enjoy wildlife and the habitat that sustains the them.
- Encourage the design of prairie style or green architecture that helps exhibit a sense of place and is designed to be appropriate to the environmental conditions of this region.
- Emphasize the sense of place by using native plants and materials at major entry points to the City and developments.

Landscape Mosaic

The most common consequences of development patterns and management practices are the fragmentation, disassembling, and isolation of habitats from each other and an interruption of the continuity of the network of corridors that connect them. Although a habitat may be perceived as intact on a fine scale, when viewed from a broader scale, the buildings, roads, and other structures that we construct inhibit how they function together. Therefore, to the maximum extent possible, each development

should preserve, restore and enhance as much native short grass prairie and as many riparian and wetland areas at the periphery of and within the fabric of the mosaic of development to ensure that habitat connectivity and network continuity is maintained.

Design Standard:

- Preserve and coordinate with other municipalities to preserve and maintain wildlife migration corridors, open space, recreational trails and wildlife habitat continuity through urbanizing areas.
- Encourage and incorporate into development covenants the use of vegetal barriers such as hedgerows that provide wildlife food and cover habitat, privacy for the homeowners, and facilitate the movement of wildlife.
- Encourage the same kind of continuous pedestrian movement corridors (i.e. trails) to be used as a network of alternative transportation that link all areas together.

Overall Pattern and Scale

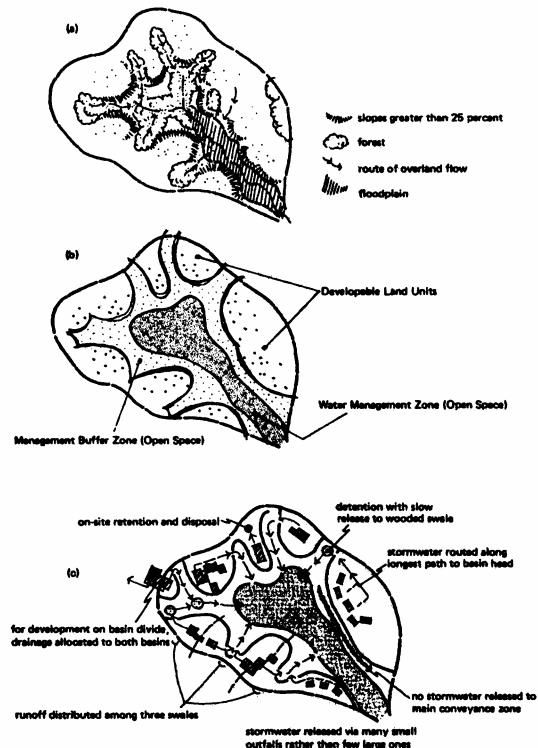
The overall pattern of the Sub-Area should be formulated based on natural boundaries at a broad scale.

- Encourage development master plans to acknowledge major and minor watershed boundaries and patterns by using clustered buildings and locating roads in the upper most portions of the upland zone of the drainage basin.
- Stipulate that buildings and impervious land cover be no greater than that required by the Municipal Code.

Landscape Corridors

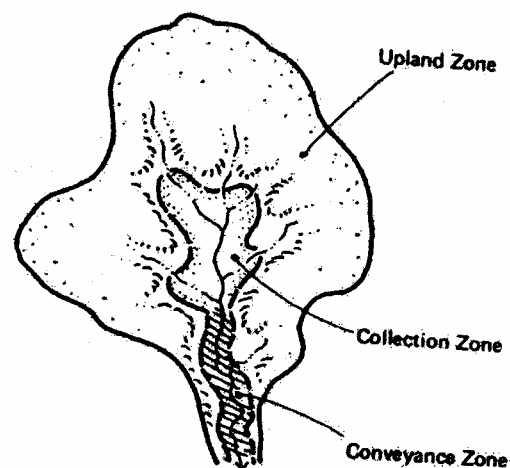
Whether for commerce, recreation, to obtain food, breed, or simply relocate, corridors are the linear portions of the landscape in which species and humans alike travel, transport and exchange goods and services. Corridors may function as free flowing conduits or as barriers and filters to movement. Where corridors connect they form networks in which different habitat areas or assemblages of species are linked and enabled to perform the necessary and basic functions of life. Different types of corridor structures have different values to those who use them. Roadways, railroads, power lines, canals, and trails facilitate human needs while stream and river corridors provide wildlife with links to areas that they need.

Each development should work to mutually combine the needs of wildlife and humans by ensuring that the movement of humans and wildlife, and the exchange of materials between the landscapes they inhabit be uninterrupted and free flowing within a network of continuous corridors, such as roads, trails, and underpasses.



Design Standard:

- Overland flow resulting from development in excess of what naturally infiltrates over the existing land cover should be retained, captured, metered and pretreated prior to entering drainage corridors. Storm water mitigation strategies such as retention and detention wetland basins for storing and releasing water slowly, on-site disposal for groundwater infiltration using pervious paving materials, wetland swales, dry wells, and clustered development should be encouraged to assist in the reduction of urban run-off and the creation of additional habitat.
- Vegetation is the single most important control of soil erosion. Until the developer has revegetated a disturbed site, silt fencing and erosion control measures should be required.

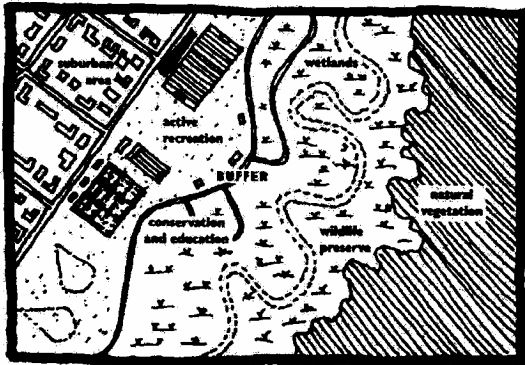


- Repair eroded stream banks using "soft" or bioengineering techniques and prohibit the channelization of drainage ways.
- Encourage development of recreational trails along irrigation ditches and canals that contain less sensitive wildlife habitat, and along water and drainage ways to provide movement corridors through urban development areas and between habitat areas.
- Require that waterways be enhanced as riparian corridors and linked to habitat areas for wildlife and pedestrian use.
- Ensure that trail alignments close to streams, wetlands and critical habitat are avoided by locating them in the least sensitive area of the habitat. Provide access at select locations that will cause the least amount of disturbance of such areas to help facilitate environmental education.
- Encourage the enhancement of ditches or canals to create natural riparian and wetland habitat for wildlife and recreational use.
- Preserve the natural flood plain as riparian and wetland buffers.
- Develop variable buffers based on habitat quality and reserve as open space.
- Establish a network of corridors that link all ditches, perennial and intermittent riparian corridors through upland and lowland areas to provide habitat connectivity and allow for the movement of wildlife.
- Create wildlife underpasses such as large culverts or bridges or grade separation across major roadways and provide warnings and slow speed recommendations at other wildlife road crossings.
- Prohibit development except passive recreational use through all sensitive riparian and wetland areas.
- Prohibit or minimize street and road alignments on or through highly sensitive riparian and wetland area and follow recreational trail guidelines established herein.
- Encourage private preservation and enhancement of riparian and wetland areas
- Limit encroachment of adjacent residential development into riparian and wetland areas by creating buffer zones.
- Increase vegetation diversity within the buffer zones, and at the fringes of the wetlands and riparian corridors.

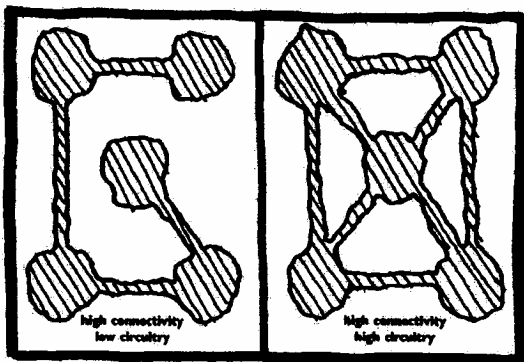
Habitat Homogeneity, Heterogeneity, and Areas

A varied mixture of turf, concrete and architecture characterizes a typical urban and suburban landscape. The richest and healthiest places for people and wildlife contain a variety of connected spaces, habitats, vegetation, and wildlife that evolve and mature overtime. Whether as a remnant from an earlier habitat, or a prairie or wetland within a development, areas of habitat of similar type that appear as isolated islands scattered about the landscape serve as crucial environmental resources. They provide recreational, educational opportunities and if connected by movement corridors, serve to meet some of the critical life cycle needs of wildlife while increasing the aesthetic, economic and functional value of a community.

Each development should preserve, enhance, and link existing large areas of habitat, create and integrate large areas of supplemental habitat types into a development, and preserve and enhance existing land covers in developments that define their edge.



Suburbanization, exotics, and protected areas. In landscapes undergoing suburbanization and consequent invasion of exotic species, a biodiversity or nature reserve may be protected against damage by invaders using a (buffer) zone with strict controls on exotic species.



Network connectivity and circuitry. Network connectivity (i.e., the degree to which all nodes are linked by corridors), combined with network circuitry (i.e., the degree to which loops or alternate routes are present), indicates how simple or complex a network is, and provides an overall index of the effectiveness of linkages for species movement.

Design Standard:

- Require that newly created wetlands be interconnected with corridors for wildlife and pedestrian use.
- In the remaining areas where "lawn" or irrigated turf is desired, allow small envelopes of turf to be planted around structures, but encourage the use of native sod forming short grass prairie species.
- Restore remnant prairie habitat reserved as open lands and repair any damaged areas or barren lands.
- Preserve and enhance existing and created wetlands through the use of Best Management Practices (BMP's).
- Preserve, create and integrate major prairie habitat areas within the sub-area and minor areas within each development to be used as recreational open space and wildlife habitat.
- Ensure that habitat areas remain unfragmented by trails, roads, and utilities.
- Provide "stepping stone" habitat areas when fragmentation or dissection is unavoidable.
- Preservation of sensitive and critical habitat areas may be achieved through high-density development, siting architecture such, that optimum area shape, and size is achieved.

Edges

Due to the way natural plant communities succeed and change over time, the edges or transitional areas between areas of habitat evolve dynamically. Where one type of habitat shrinks another will expand. In a prairie landscape where people choose a more arboreal or tree-like environment, and where natural disturbances such as fire are prevented to naturally maintain the ebb and flow of habitat, the landscape must be managed to preserve the prairie and prevent its total conversion to a forested landscape.

In the planting and maintenance of urban forests, shrub lands and prairie, each development should attempt to preserve and maintain the overall area size and shape of prairie habitat, and maintain an edge structure and configuration that contains a continuum of age diverse and a species diverse plant community.

Design Standard:

- Create and manage vegetative edges with high vertical (differing age structure and species) to enrich edge animal species.
- Create and manage vegetative edges with high horizontal diversity that has unabrupt and convoluted configurations to facilitate species movement and enrich diversity.

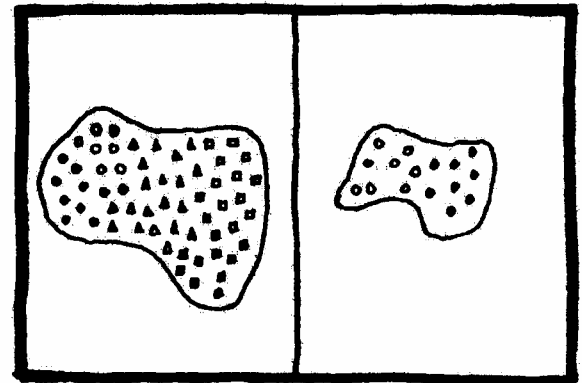
Wildlife Conservation, Habitat Diversity, and Management

With the onset of major development and a typical shift in landscape management practices, habitat size declines, wildlife populations are forced out, and species and habitat diversity and composition are altered.

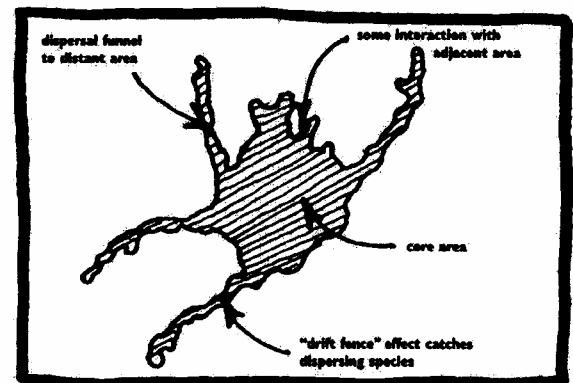
Each development should preserve the maximum size of habitat and maintain or increase species richness, composition and diversity similar to that which occupied the landscape prior to development and such that wildlife life requisites are satisfied.

Design Standard:

- Encourage neighborhood associations and homeowners to construct appropriate wildlife habitat structures for the mitigation of all wildlife displaced by the development, and provide for the production or supplement of food, cover, breeding and nesting habitat throughout the development.
- Require the use of a diversity of native Front Range seed and fruit bearing vegetation throughout the Sub-Area to conserve water,



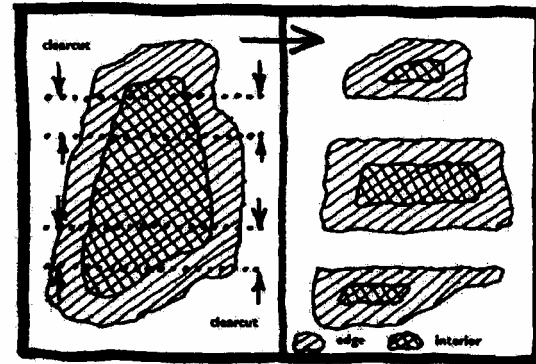
Habitat diversity. A large area is likely to have some habitats present, and therefore contain a greater number of species than a small area.



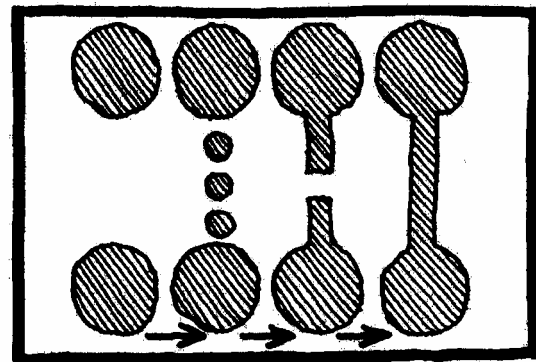
Ecologically "optimum" patch shape. An ecologically optimum patch provides several ecological benefits, and is generally "spaceship shaped," with a rounded core for protection of resources, plus some curvilinear boundaries and a few fingers for species dispersal.

create wildlife habitat and to reinforce a sense of place indigenous to the prairie environment.

- Preserve or relocate prairie dog colonies, but discourage their dispersal and the expansion of colony size by visual screening. Establish tall, dense grasses in or around colonies to discourage expansion by limiting areas containing unobstructed views that prairie dogs prefer.
- Preserve all mature trees and more dense vegetation where possible to provide for cover, roosting and nesting sites and replaces plant material in kind where removal is unavoidable.
- Encourage responsibility and accountability for the revegetation of disturbed sites with native vegetation for the benefit of wildlife, remove all existing exotic and invasive vegetation and guarantee post-project maintenance to ensure native plant community establishment.



Loss of total versus interior habitat. Fragmentation decreases the total amount of a particular habitat type, but proportionally causes a much greater loss of interior habitat.



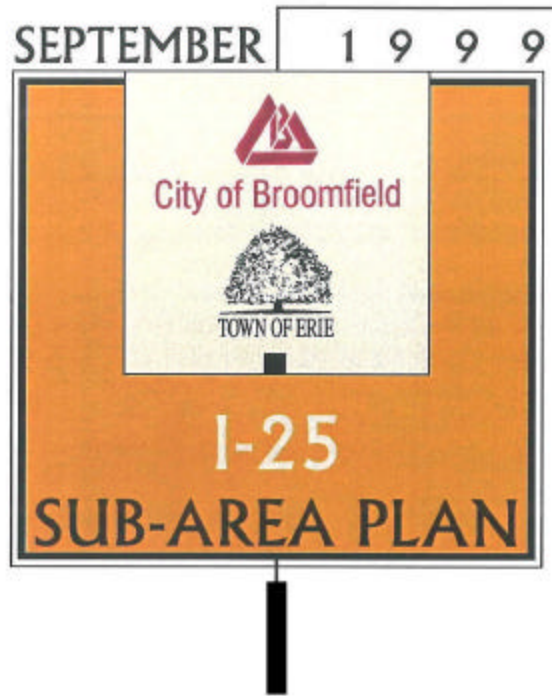
Stepping stone connectivity. A row of stepping stones (small patches) is intermediate in connectivity between a corridor and no corridor, and hence intermediate in providing for movement of interior species between patches.

Solar Radiation and Heat Sinks

Solar radiation when combined with large expanses of pavement and absorptive structures create a heat sink in urbanized areas increasing the air temperature causing certain types of wildlife to be unable to survive and physical human discomfort. Additionally, heat sinks receiving rainfall that eventually reaches the riparian corridors are deleterious to aquatic life.

Design Standard:

- Encourage developers and designers to specify paving and building material that reduce the heat sink effect and plant native trees in direct relationship to solar angles to reduce urban heat.



12

CONSTRUCTION CRITERIA AND MAINTENANCE STANDARDS

- Construction Staging and Site Management
- Temporary Structures/Facilities
- Pollution Controls

Goals:

1. Promote development, which is properly phased, timed, and coordinated to reduce construction related impacts.
2. Promote construction sites which are clean, tidy, and free from nuisances associated with construction activities, including noise, air, and water pollution.
3. Require developers to maintain construction sites and to mitigate disruptions of pedestrian, bicycle, and vehicle circulation patterns during construction.

Construction Staging and Site Management***Design Standard:***

1. Each developer shall be required to protect the public during all construction operations and to fully coordinate construction schedules with adjacent owners, developers, contractors, tenants, and users.
2. Each developer shall prepare and have available for review by the City an accurate and updated Construction Site Logistics Plan which addresses the following: (1) project

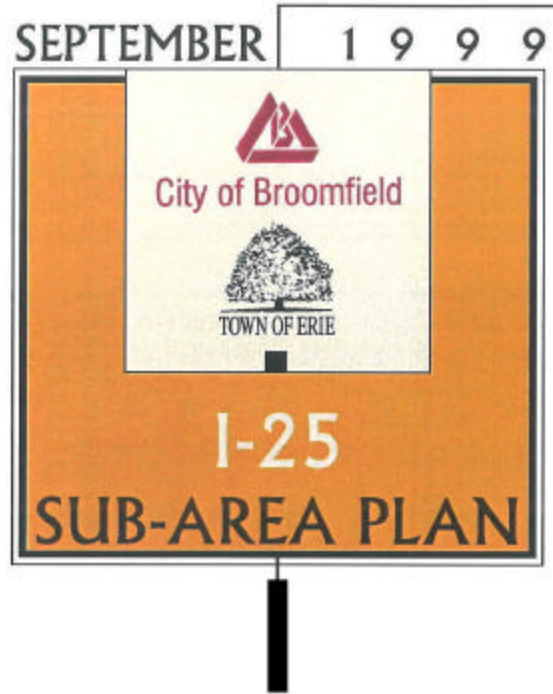
schedule and timing; (2) siting of construction activity and location of staging areas; (3) erosion control measures; (4) construction access, servicing, and deliveries; and (5) construction parking controls, including mud control devices.

3. Each developer shall submit a Construction Site Logistics Plan, which addresses potential construction impacts related to disruption of pedestrian, bicycle, transit, and emergency vehicle circulation.

Temporary Structures/Facilities***Design Standard:***

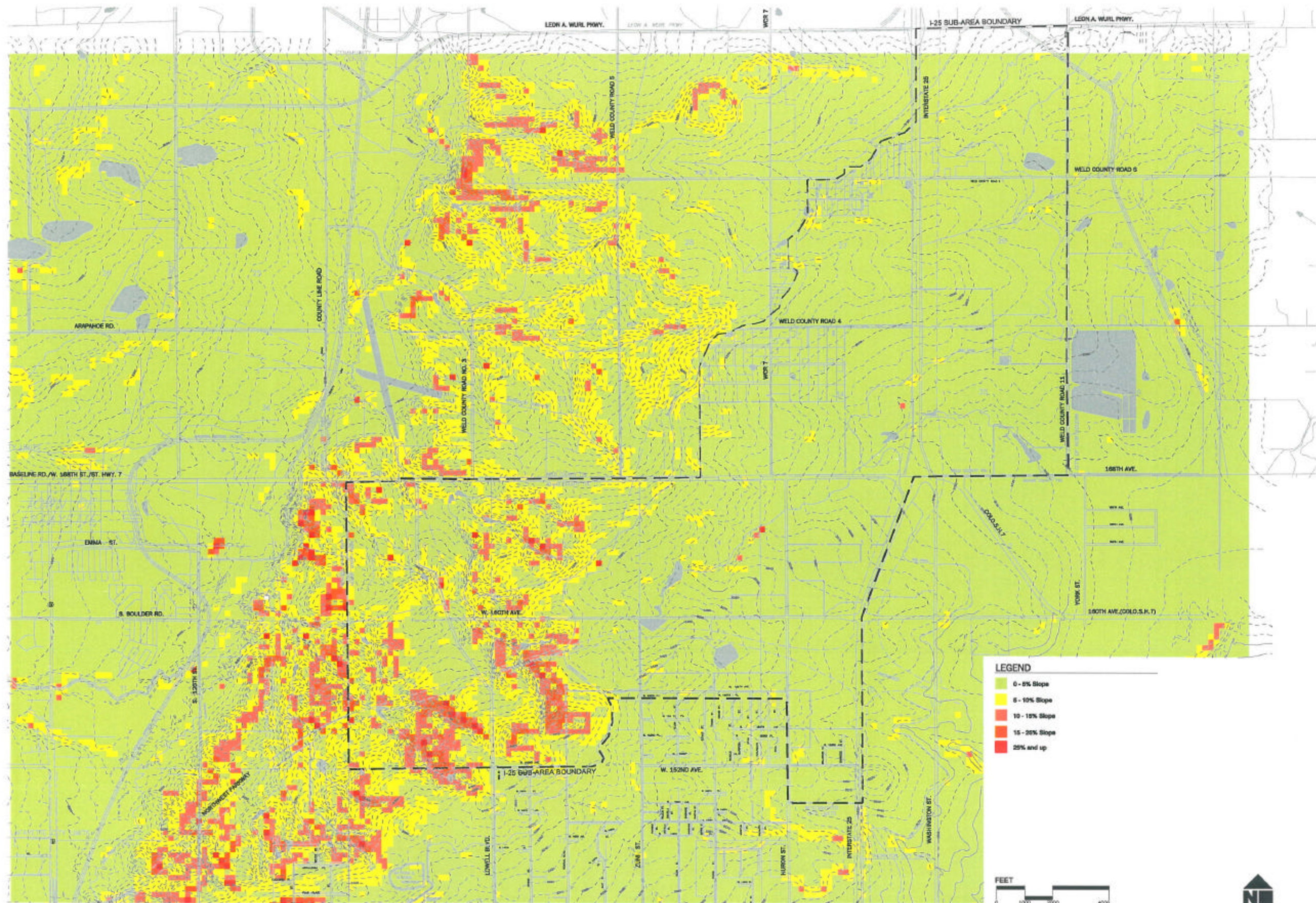
1. In addition to all regulatory requirements, each development phase within the I-25 Sub-Area shall clearly demonstrate and receive City approvals for all temporary structures and facilities. The Construction Site Logistics Plan should show all temporary structures, trailers, lighting, signage, utilities, and key security measures.

MISSING THE NEXT SECTION ON POLLUTION CONTROLS!

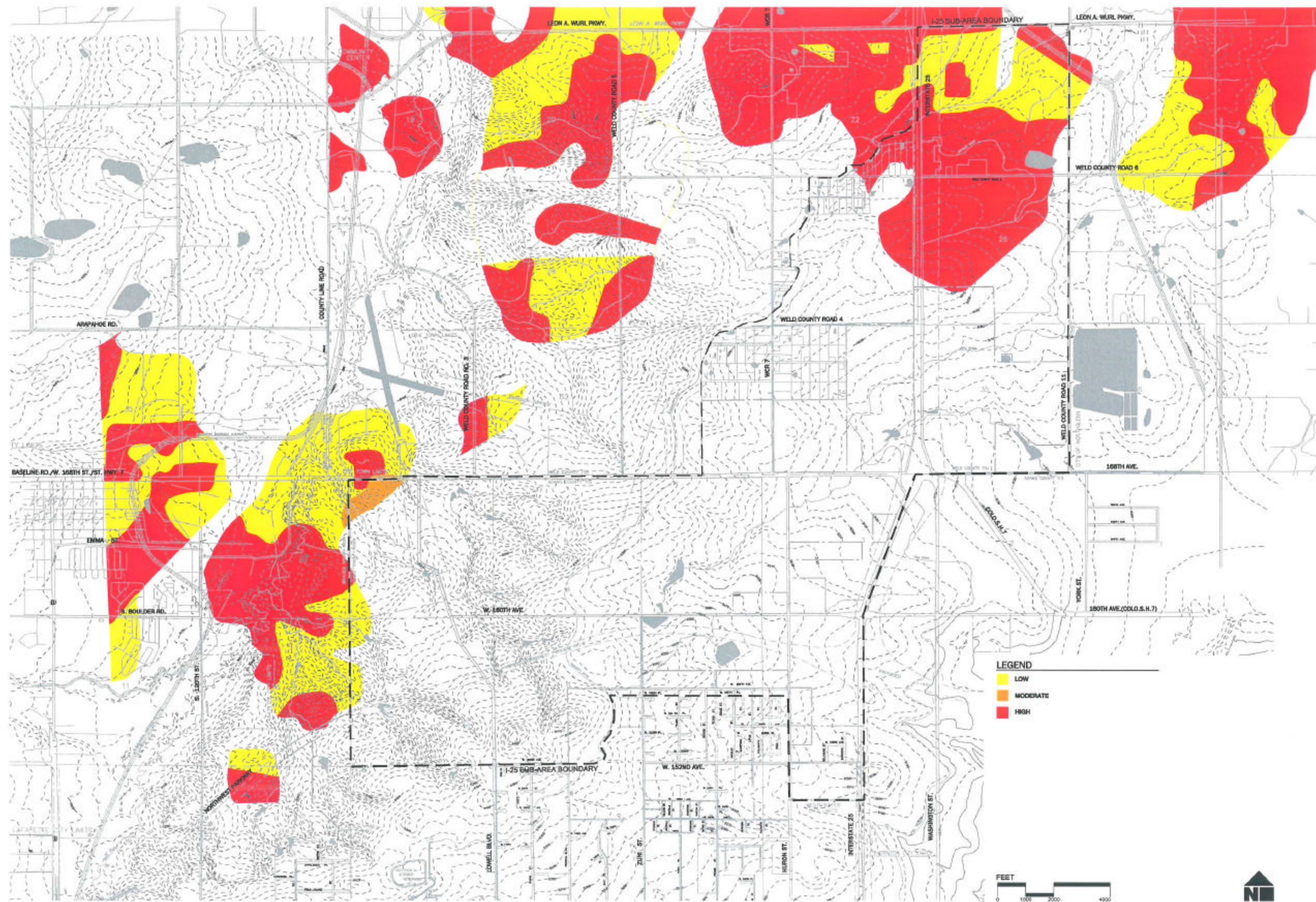


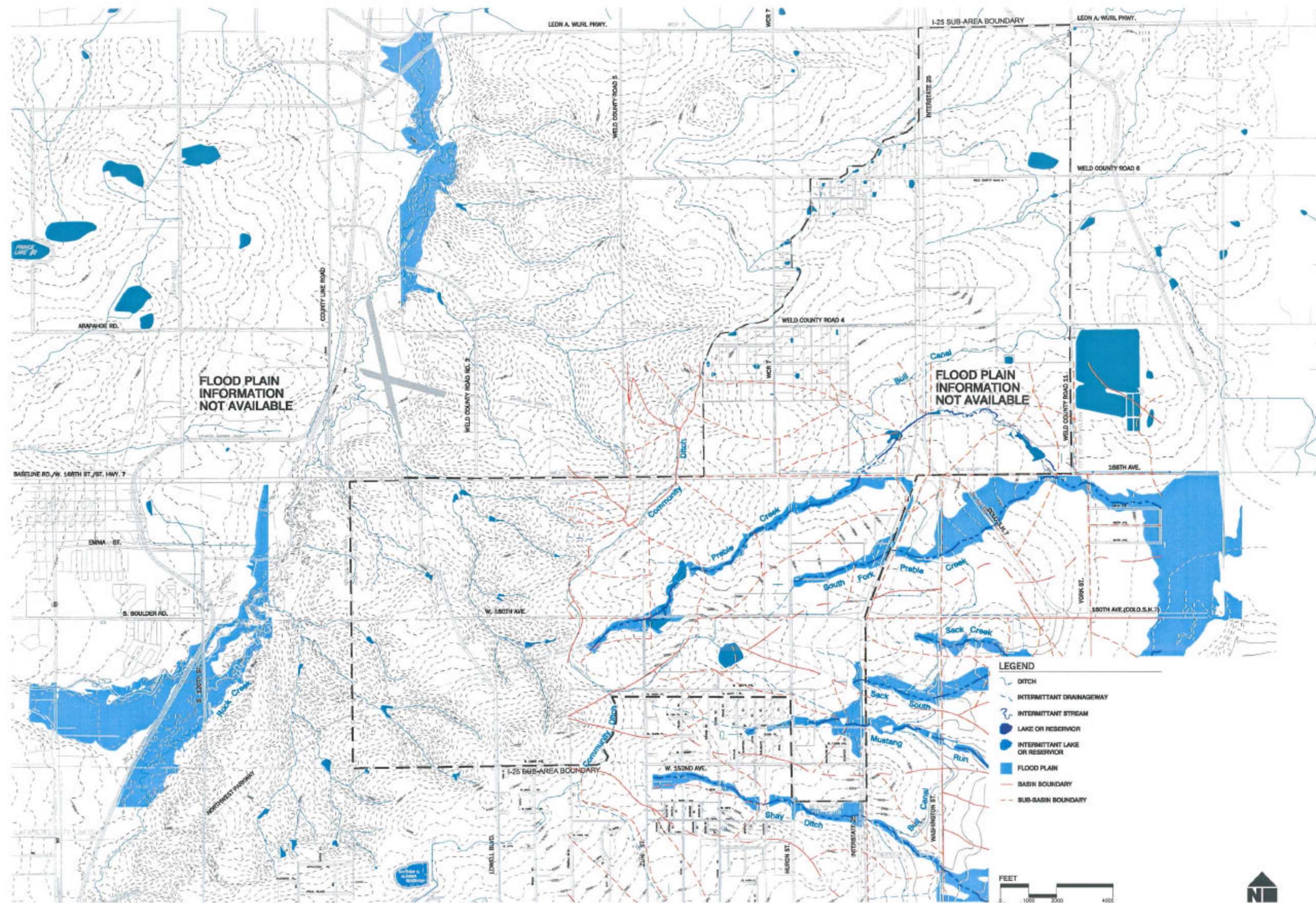
VII

TECHNICAL APPENDIX

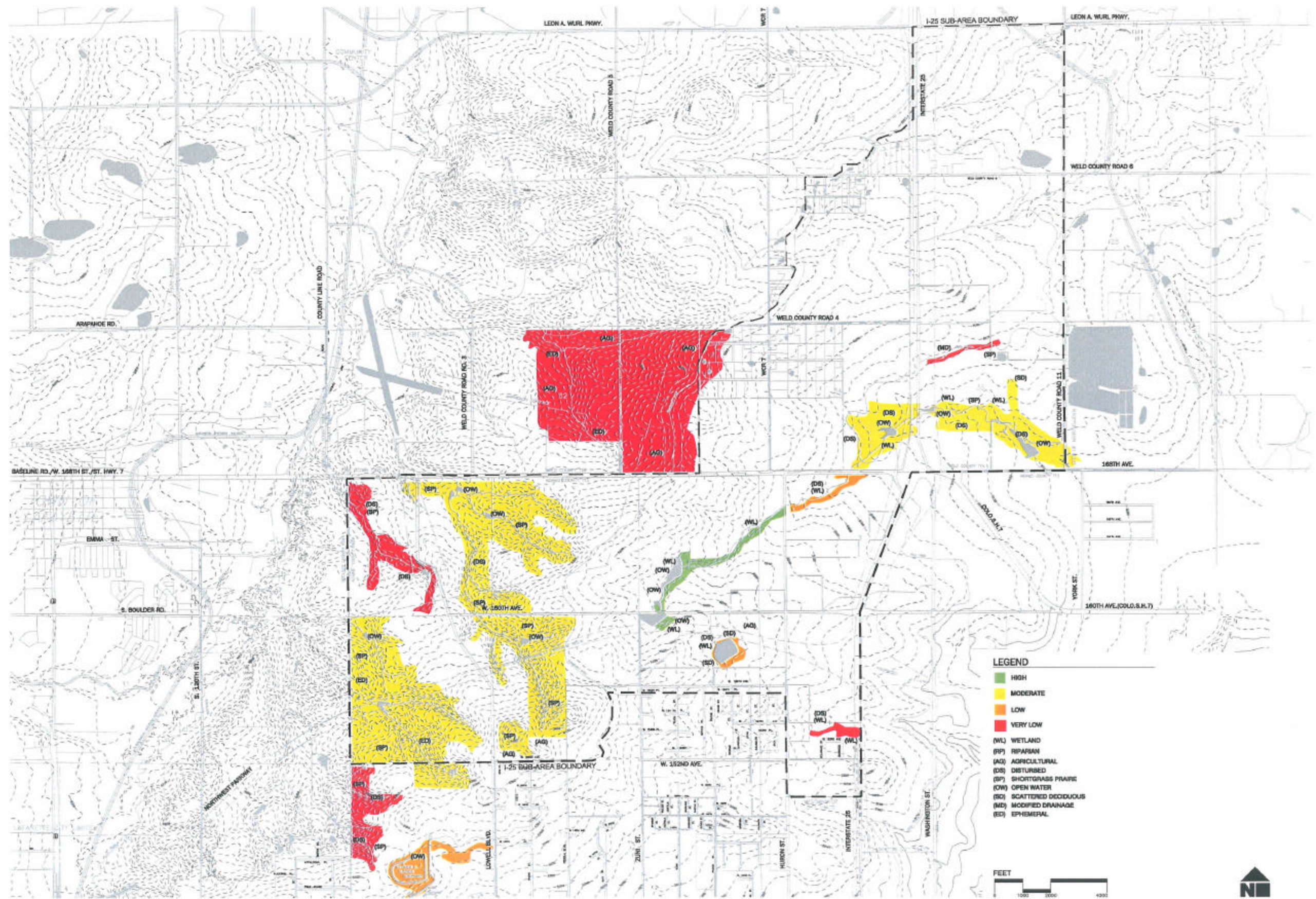


Appendix A: Slope Analysis

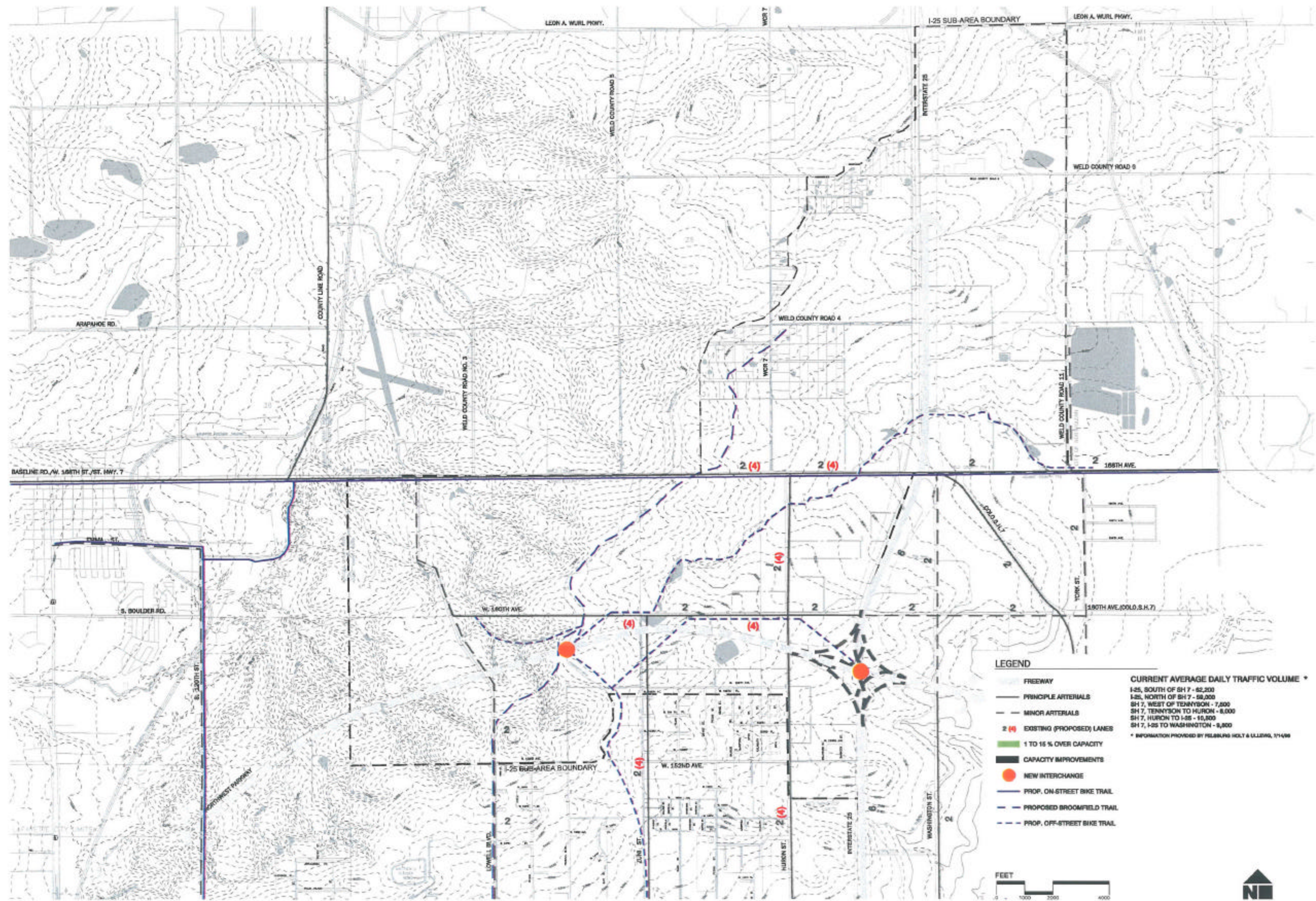




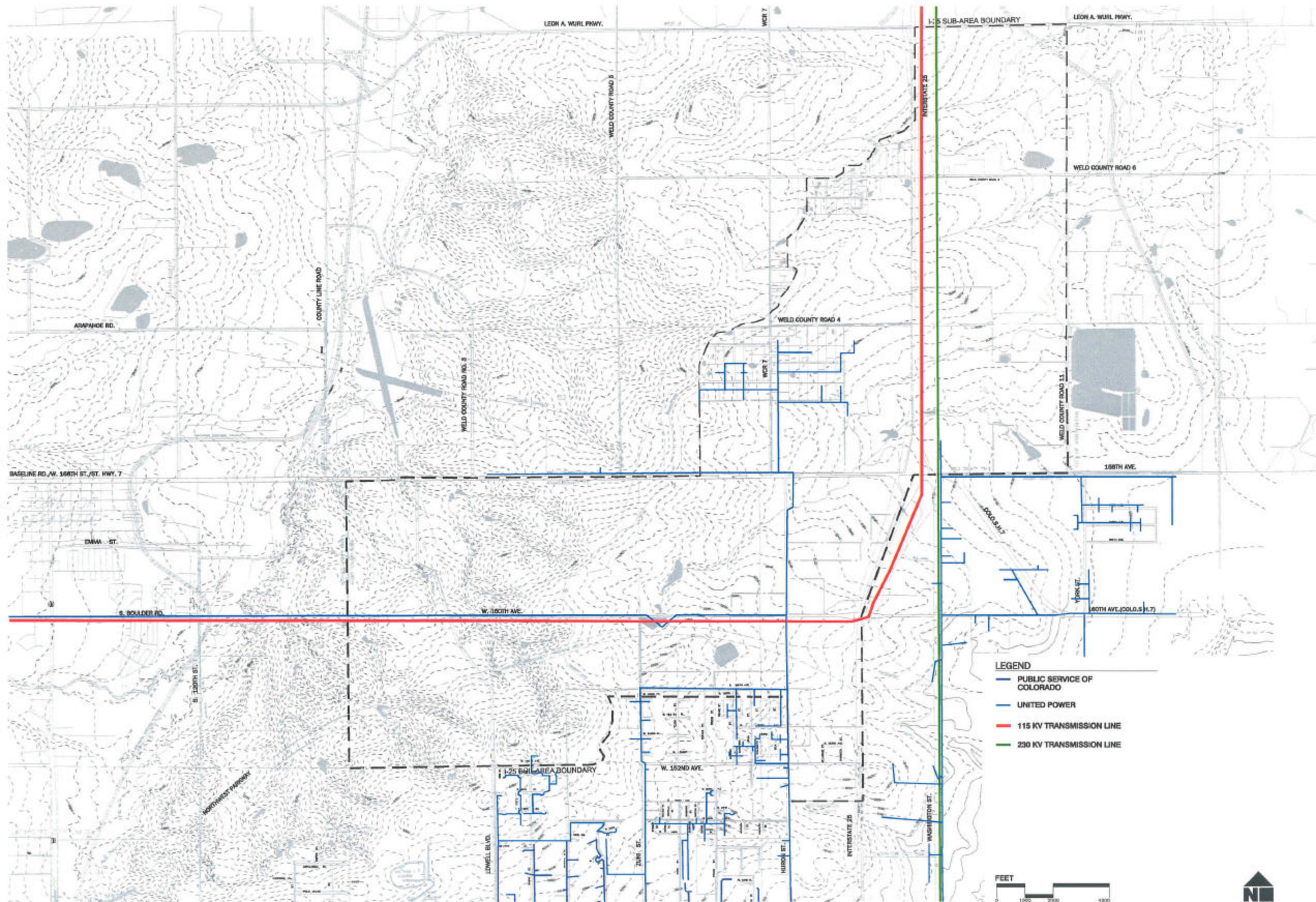
Appendix C: Flood Plain and Hydrology

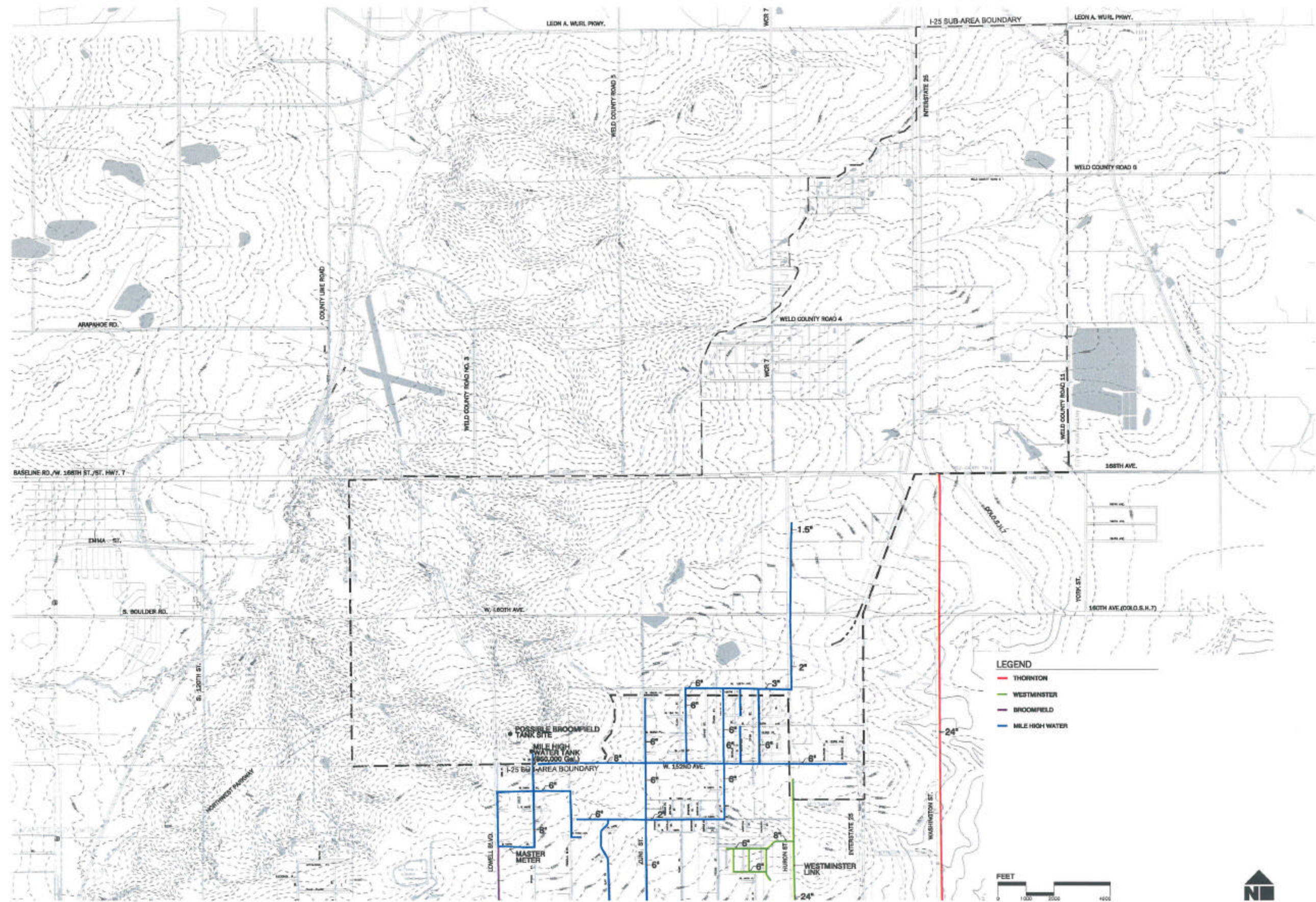


Appendix D: Local Habitat/Vegetation Ratings

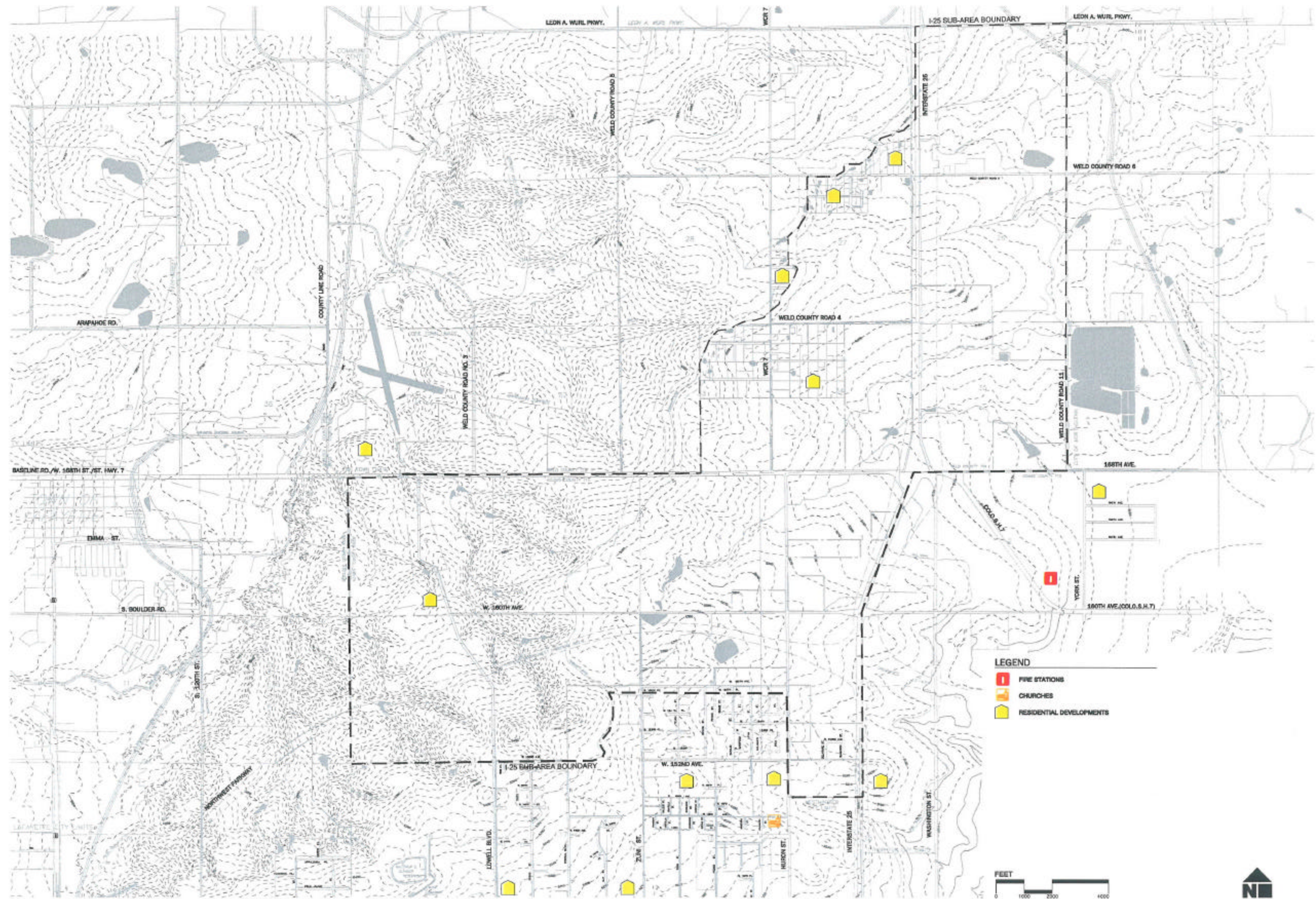


Appendix E: Existing Transportation Plan

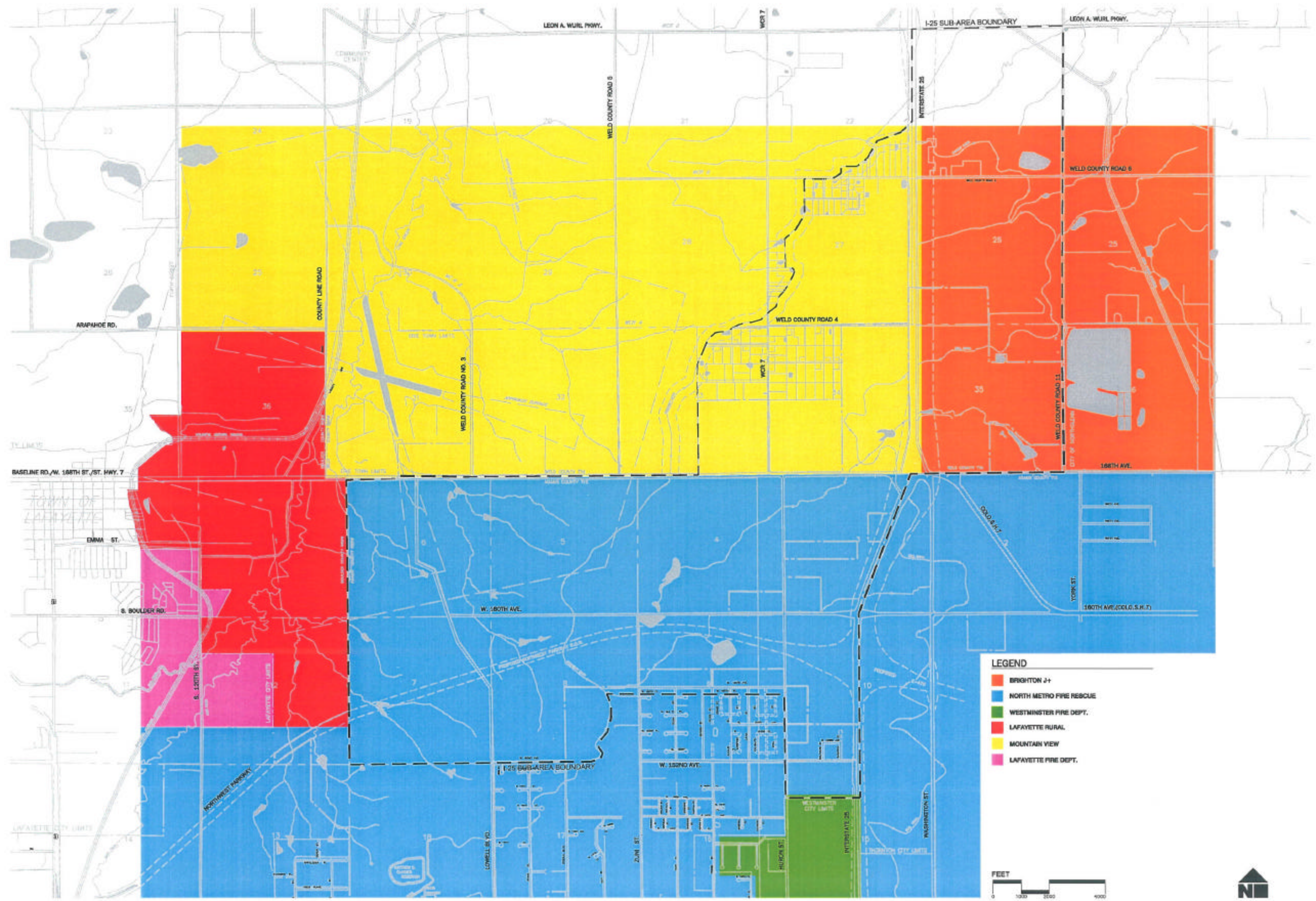




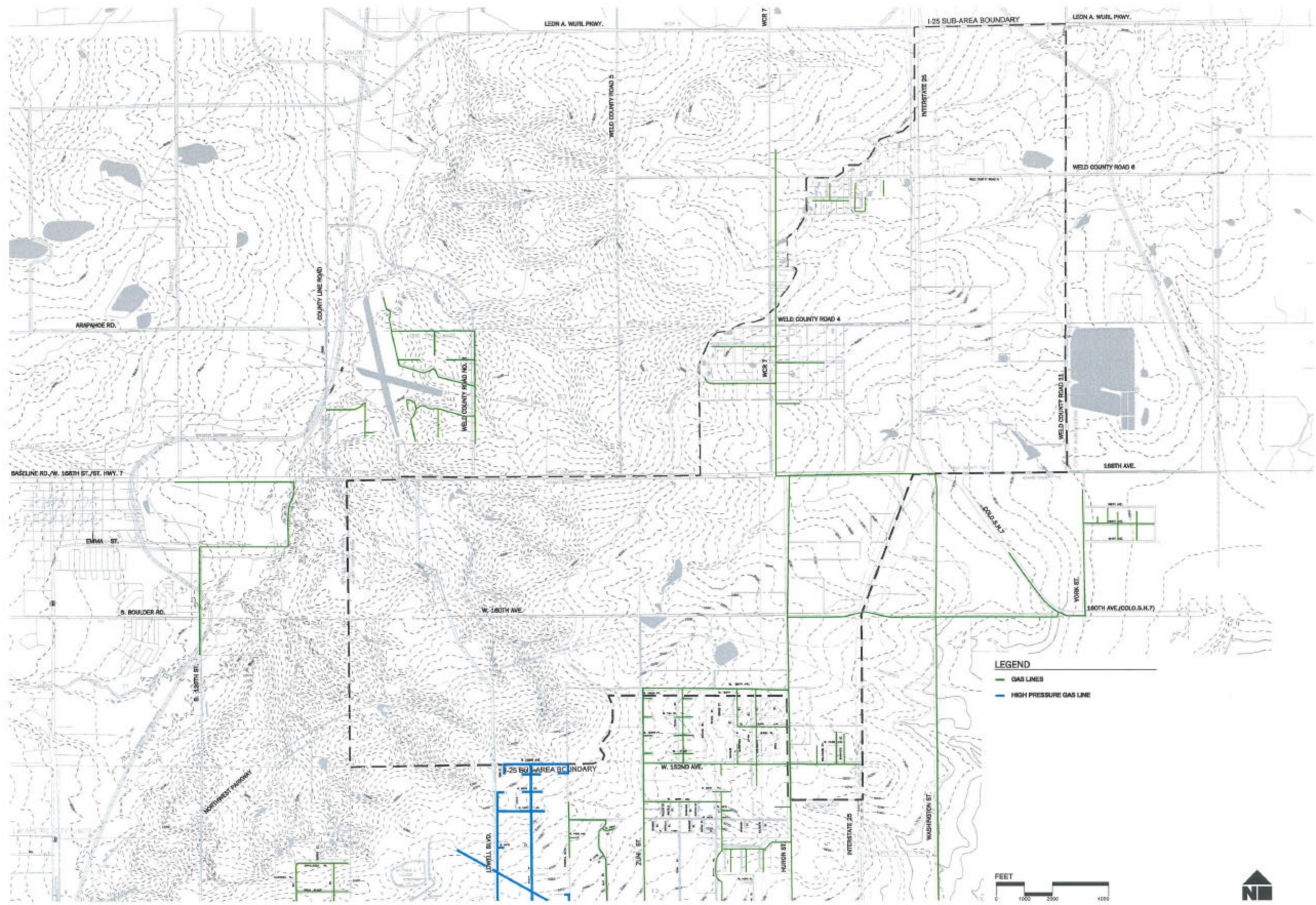
Appendix G: Water Distribution



Appendix J: Residential and Community Services

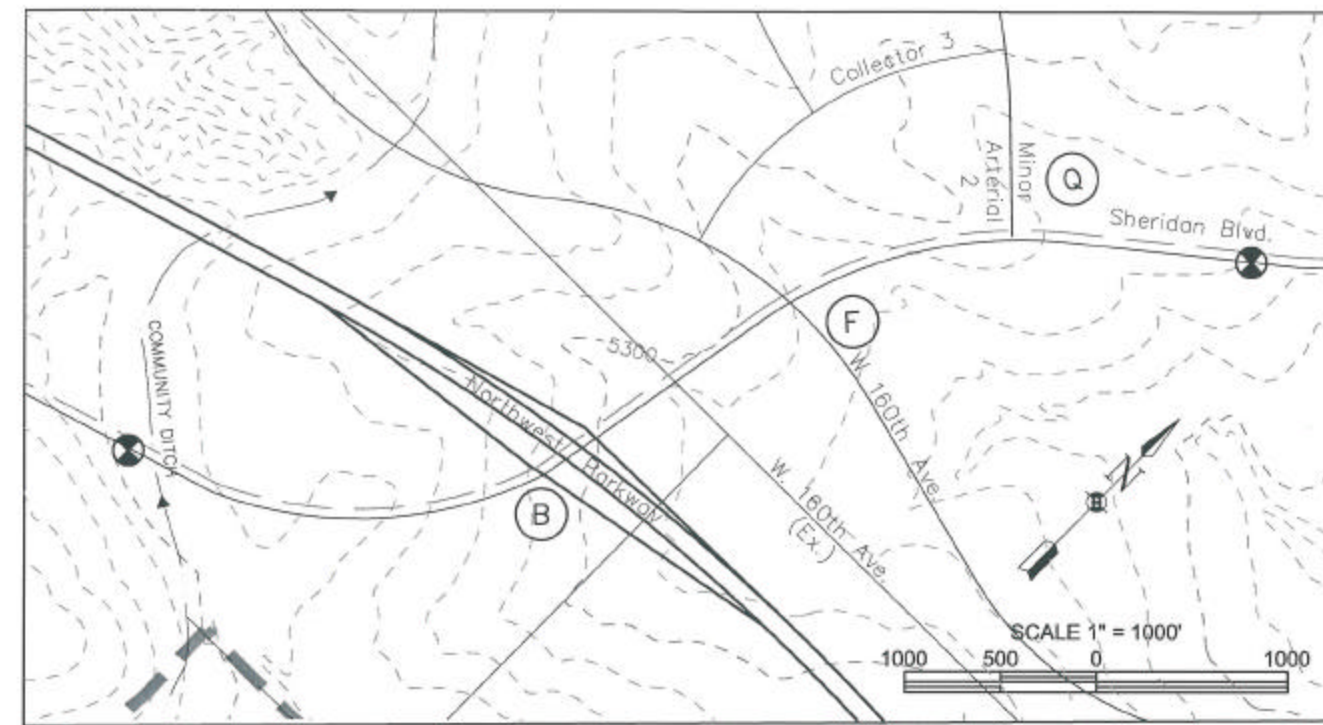
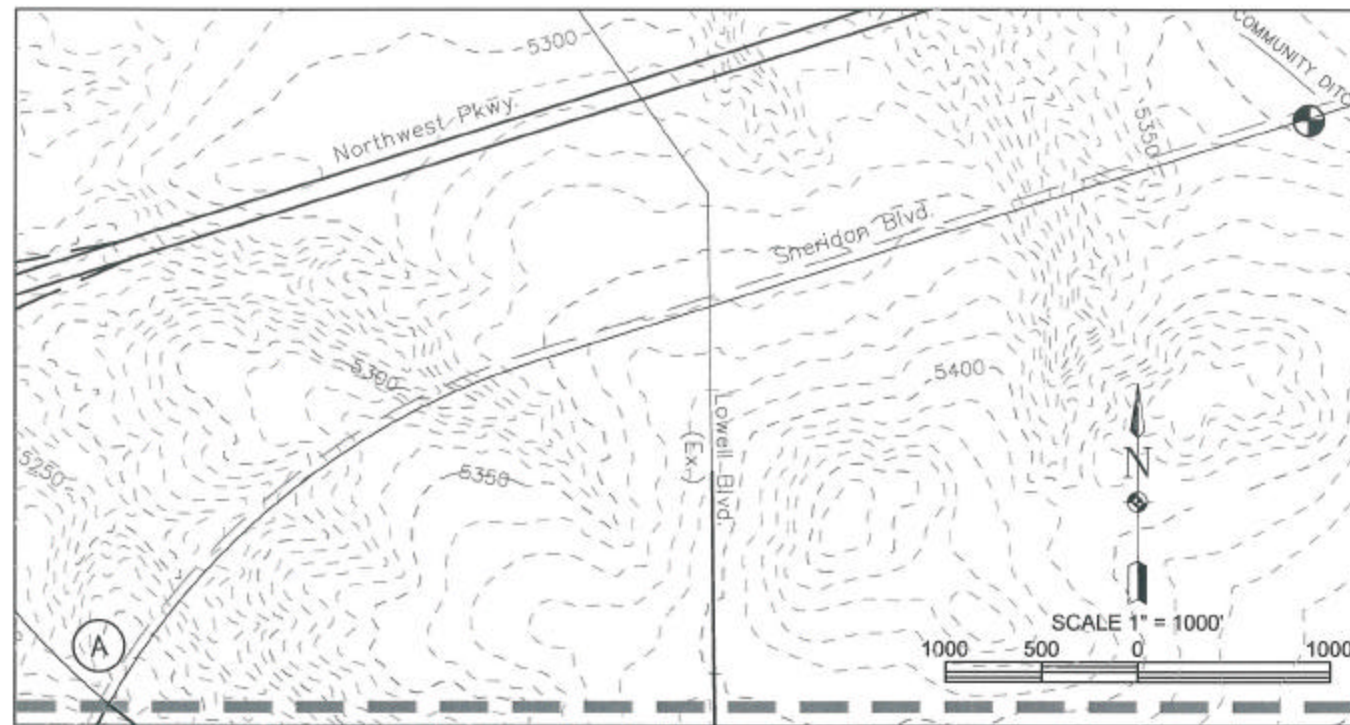


Appendix L: Fire Districts

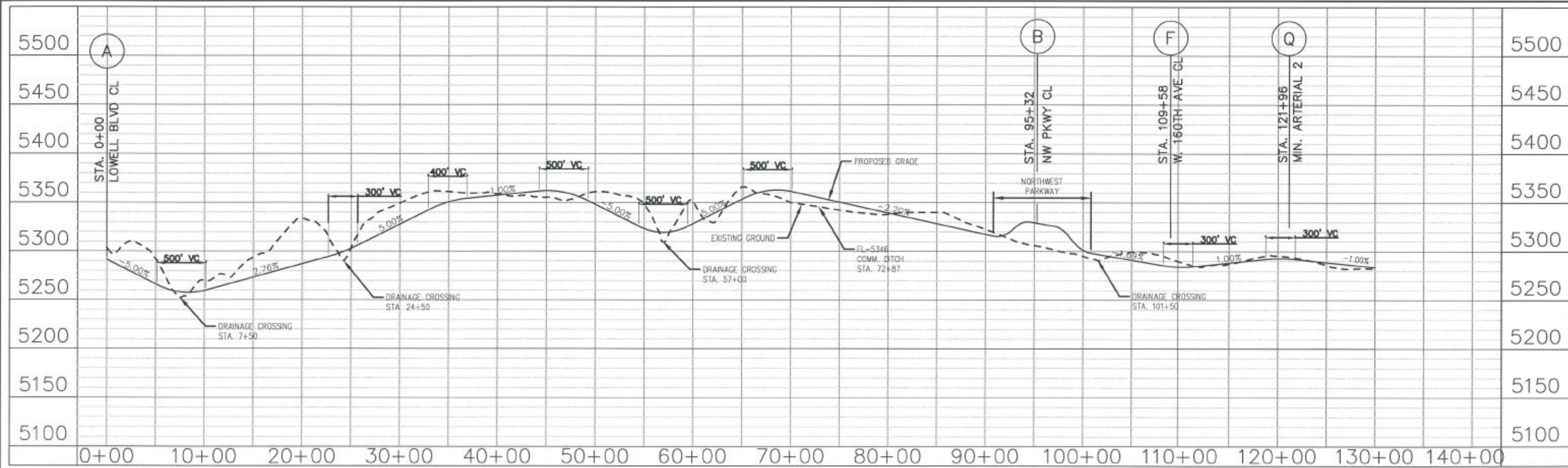




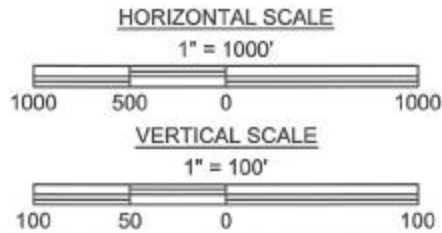
TECHNICAL APPENDIX: ROAD IMPROVEMENTS



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 - ⊕ MATCHLINE
 - PROJECT BOUNDARY

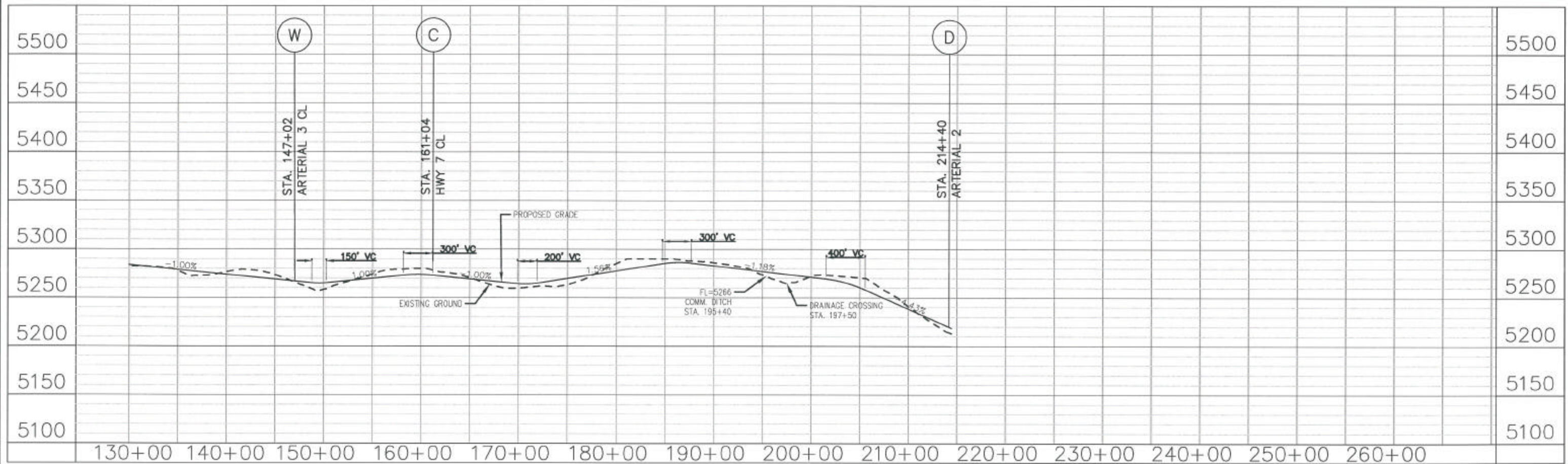
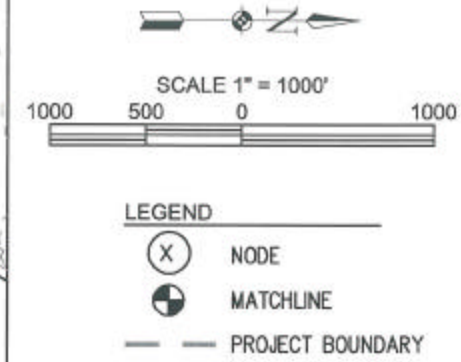
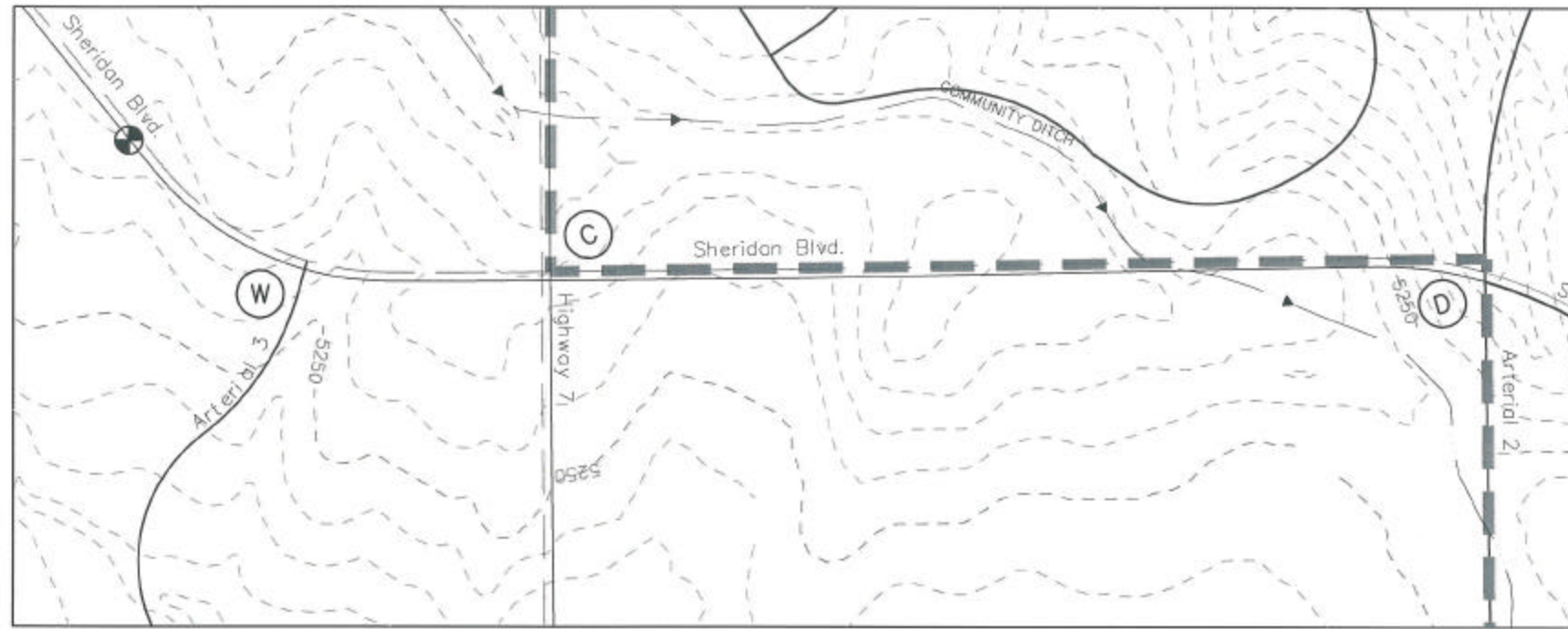


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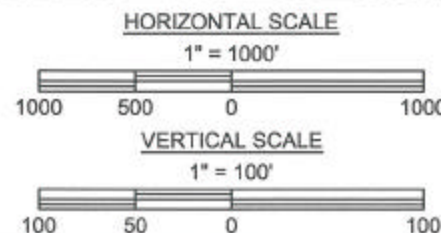
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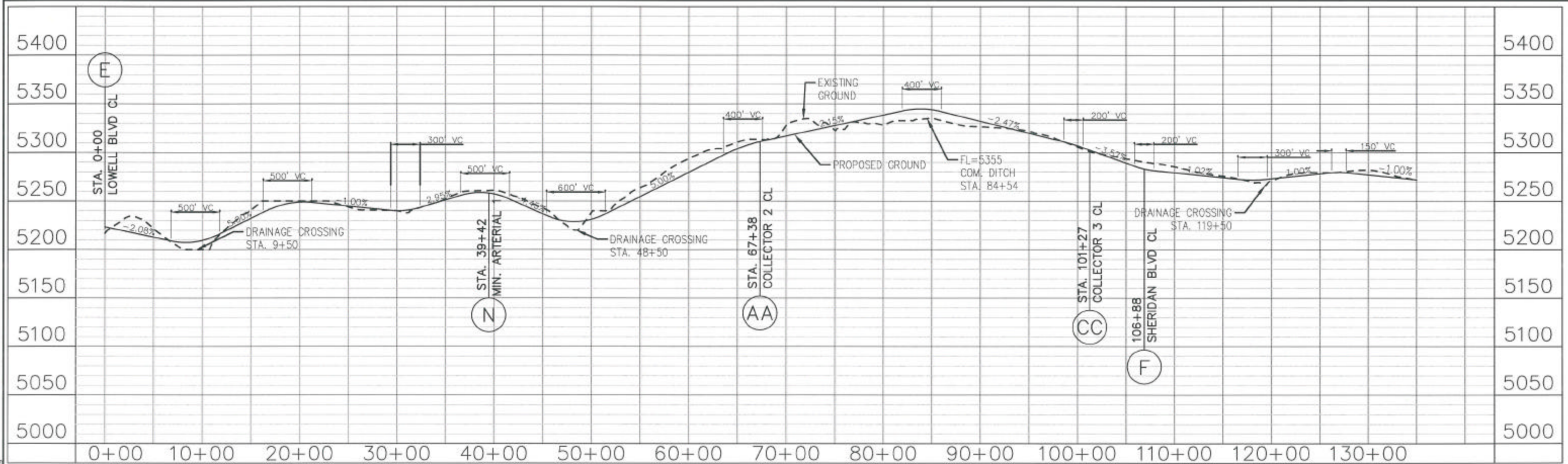
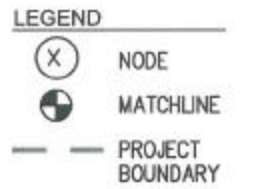
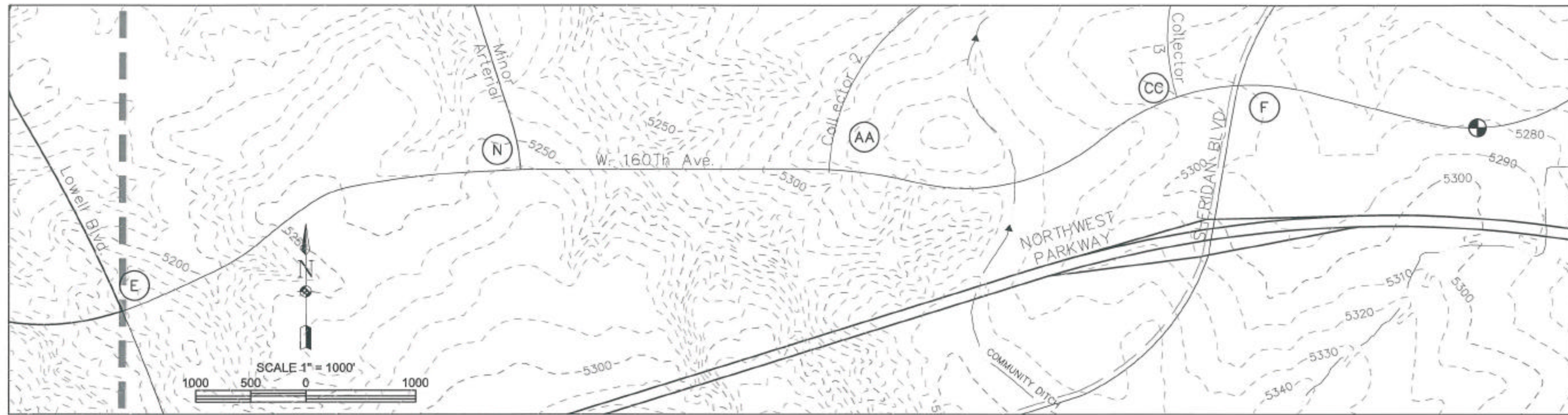
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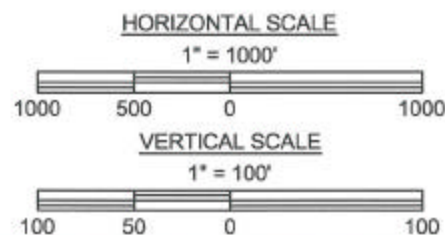
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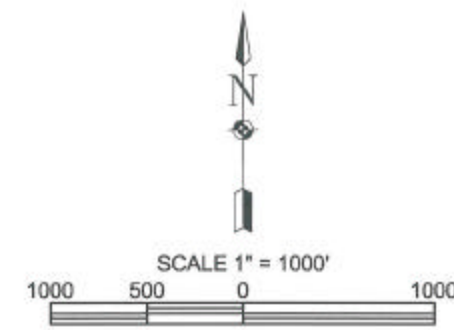
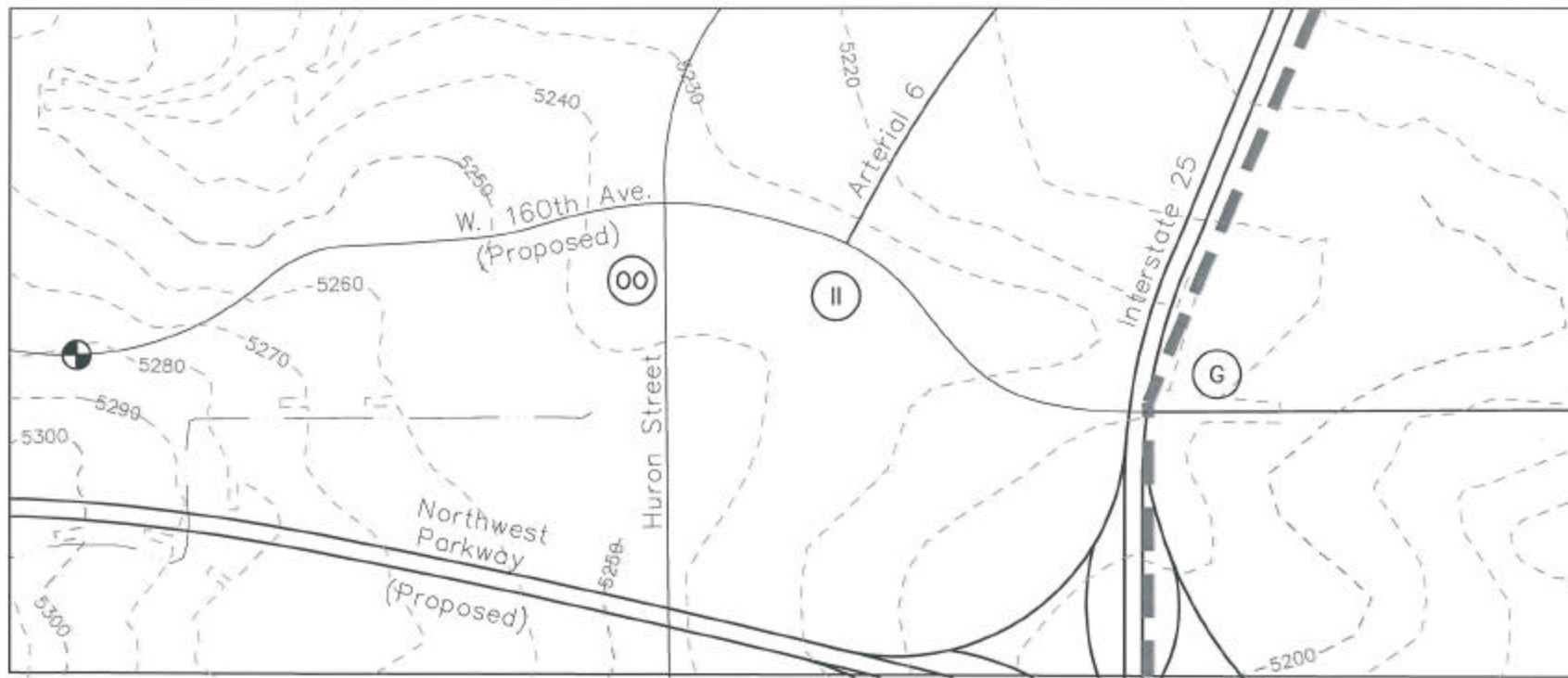
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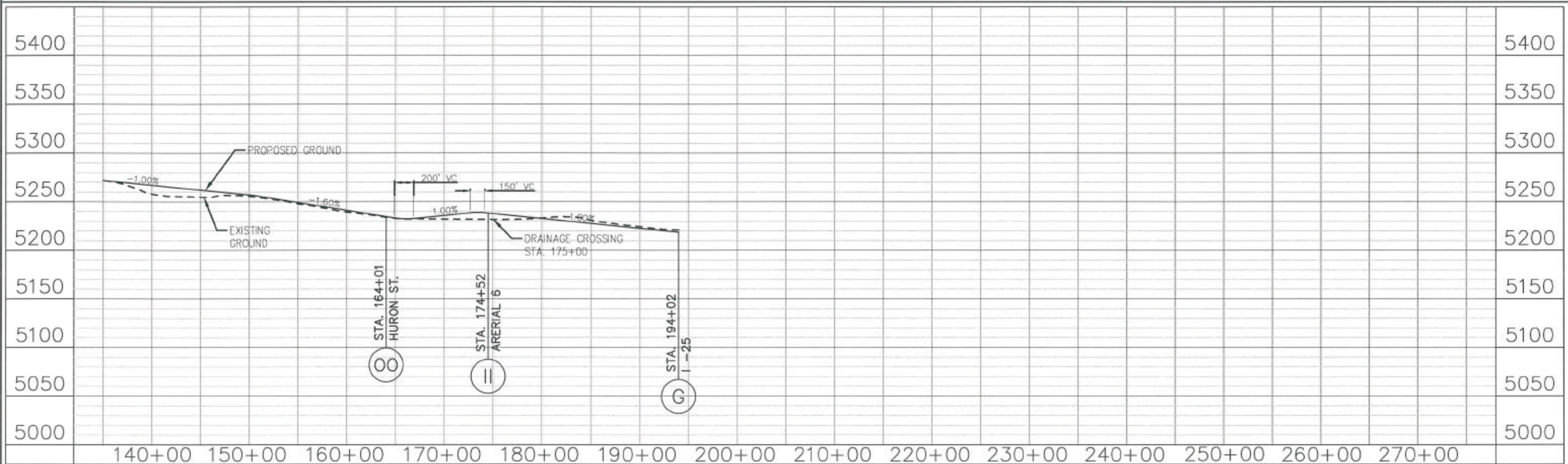
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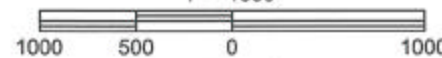


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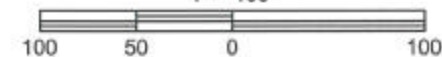
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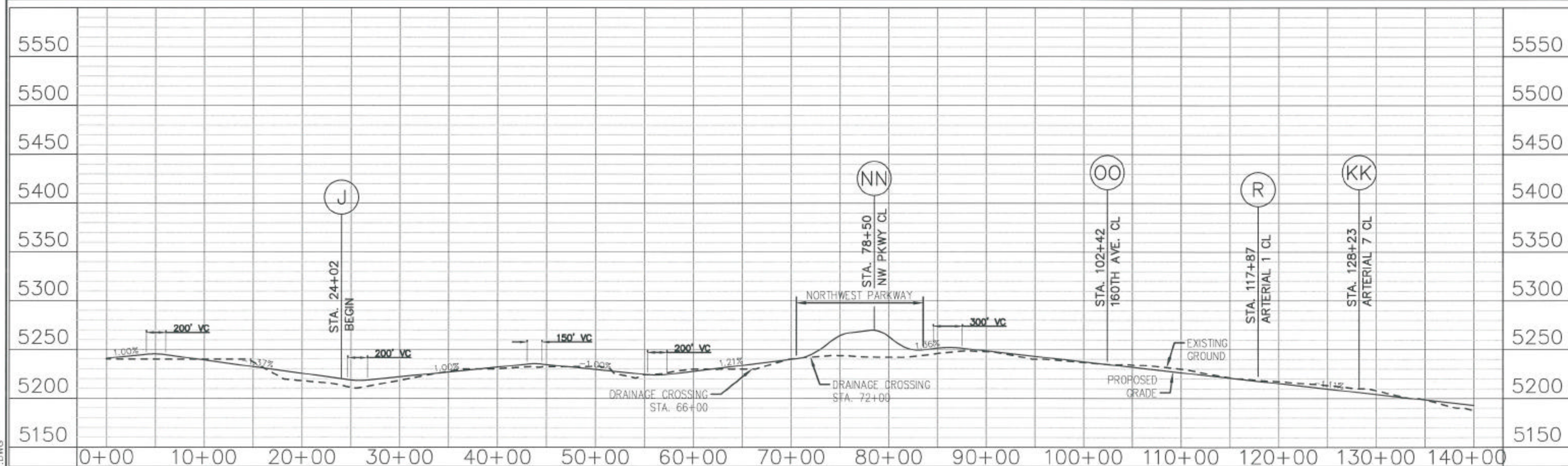
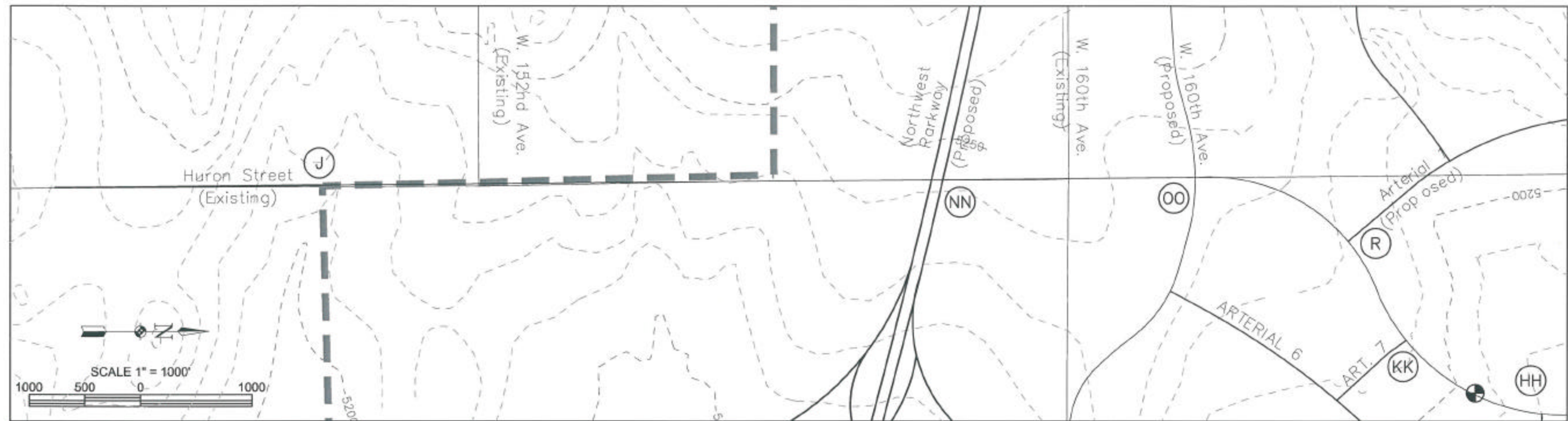
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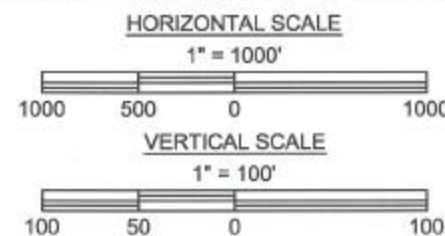
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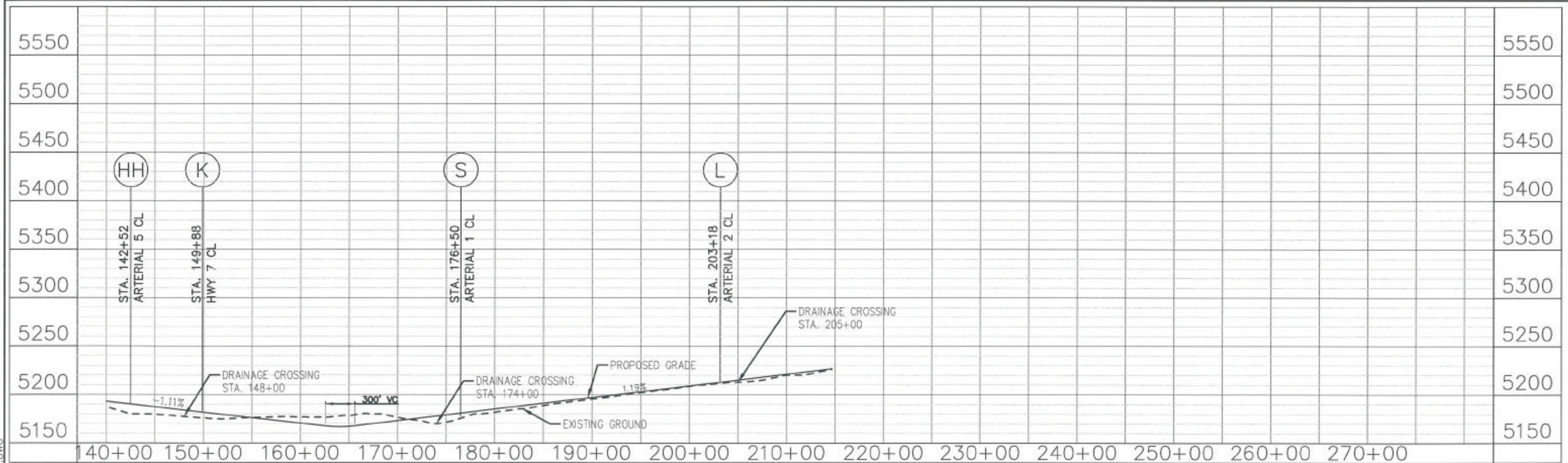
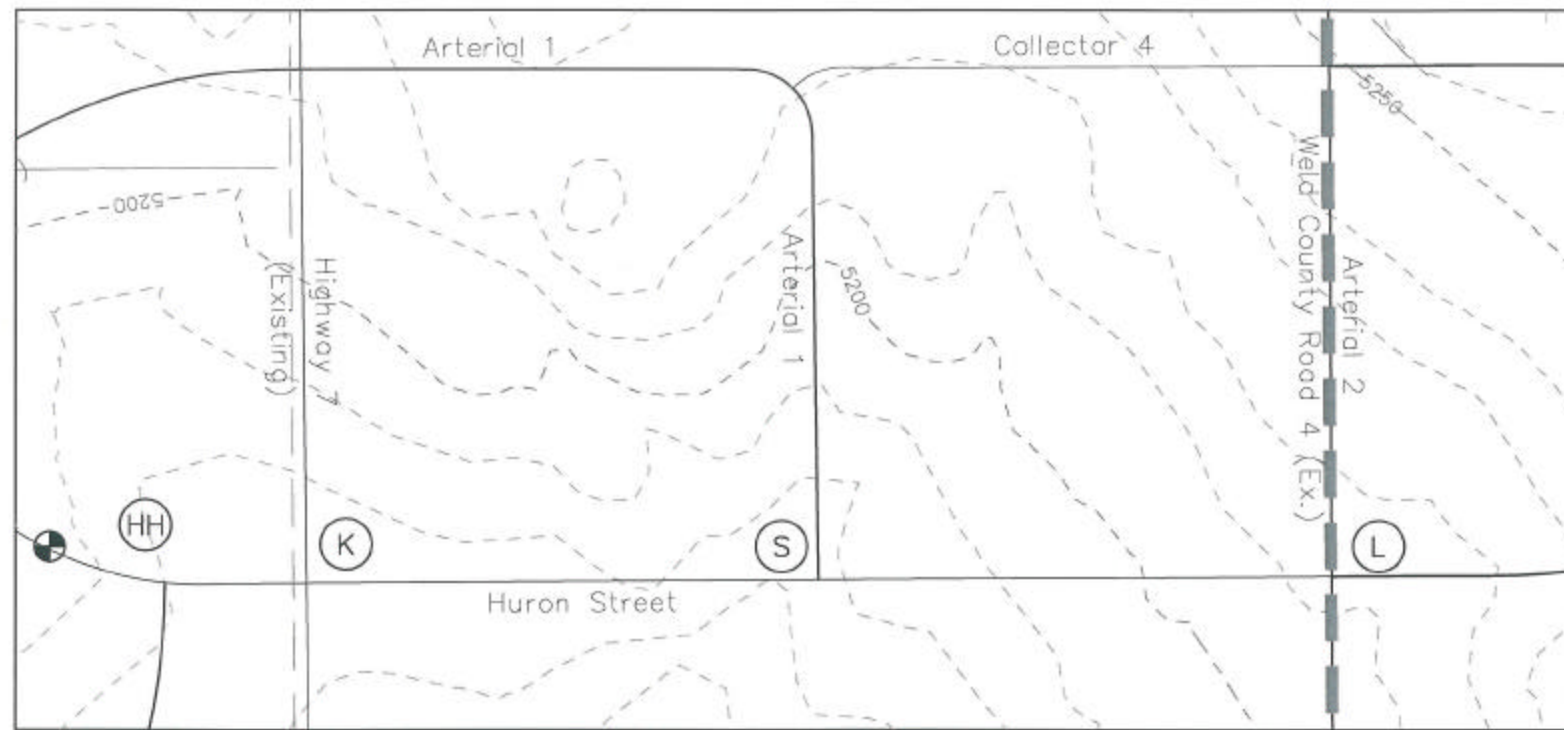
PROJECT ENGINEER/ARCHITECT DATE
J. MOORE 6/21/99
PROJECT MANAGER DATE
S. MYERS 6/21/99
DATE
DRAWN BY DATE DRAWN
A. REESE 6/21/99
SCALE DATE ISSUED
1"=1000'

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I-25 SUB-AREA
BROOMFIELD
MASTER PLAN

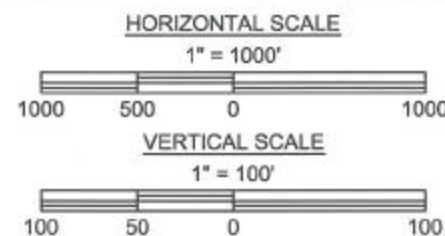
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HURON STREET PROFILE

PROJECT NO.
346-004
DRAWING NO.
5 OF 18



NOTE:

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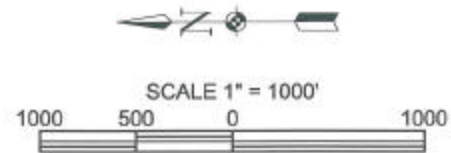
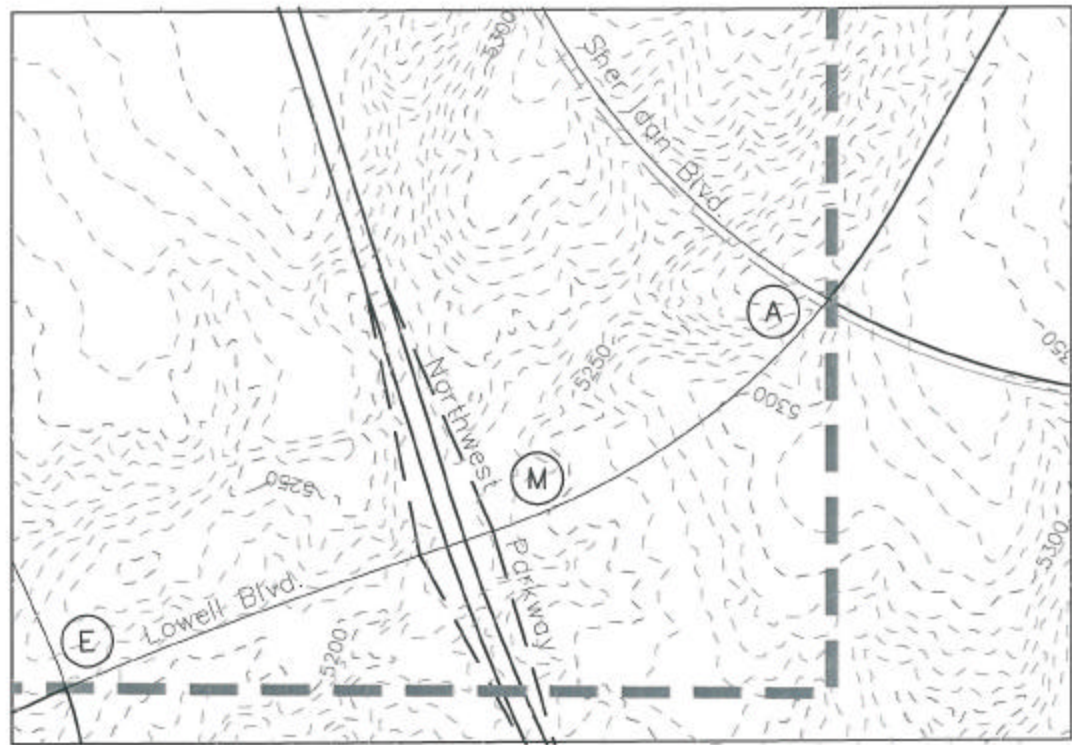
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J. MODRE 6/21/99
PROJECT MANAGER DATE
S. MYERS 6/21/99
SPL/IRMO/ATL/RE/MW/2000 DATE
DRAWN BY DATE DRAWN
A. REESE 6/21/99
SCALE
1"=1000'

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BROOMFIELD
MASTER PLAN

TITLE OF DRAWING
HURON STREET PROFILE

PROJECT NO.
346-004
DRAWING NO.
6 OF 18

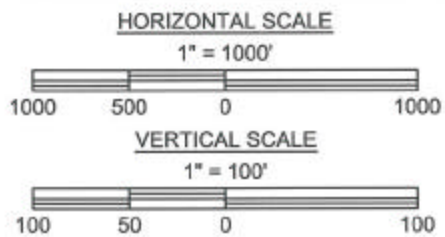


- LEGEND**
- (X) NODE
 - (+/-) MATCHLINE
 - PROJECT BOUNDARY



NOTE:

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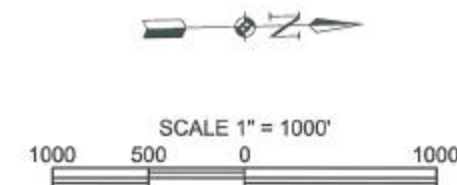
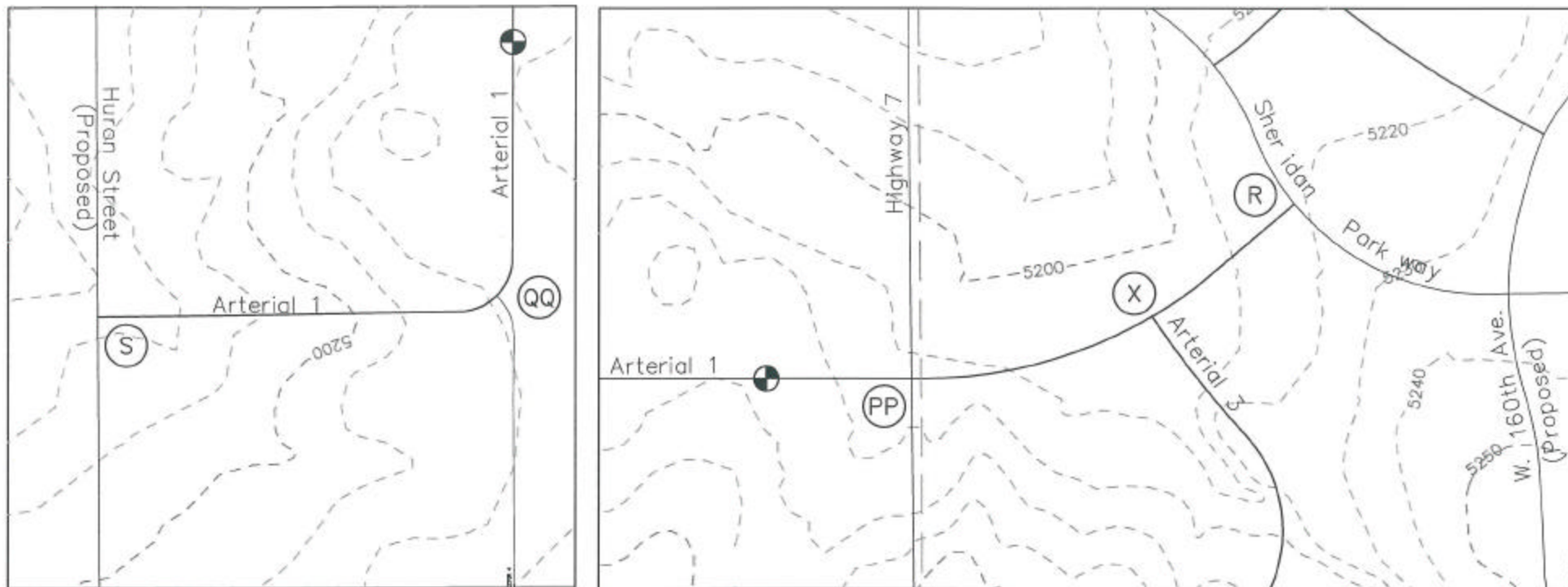
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J. MOORE 6/21/99
PROJECT MANAGER DATE
S. MYERS 6/21/99
DEPT./BRANCH/OFFICE/MANAGER DATE
DRAWN BY DATE DRAWN
A. REESE 6/21/99
SCALE DATE ISSUED
1"=1000'

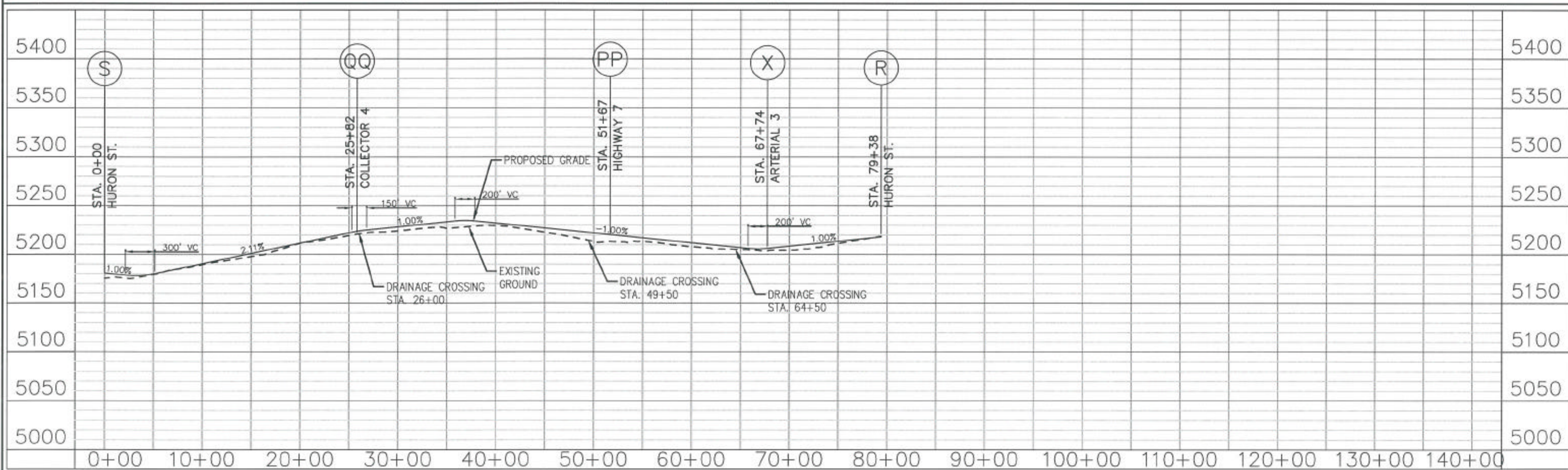
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I-25 SUB-AREA
BROOMFIELD
MASTER PLAN
TITLE OF DRAWING
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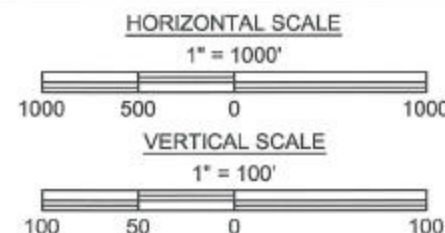
PROJECT NO.
346-004
DRAWING NO.
7 OF 18



- LEGEND**
- (X) NODE
 - ⊕ MATCHLINE
 - PROJECT BOUNDARY

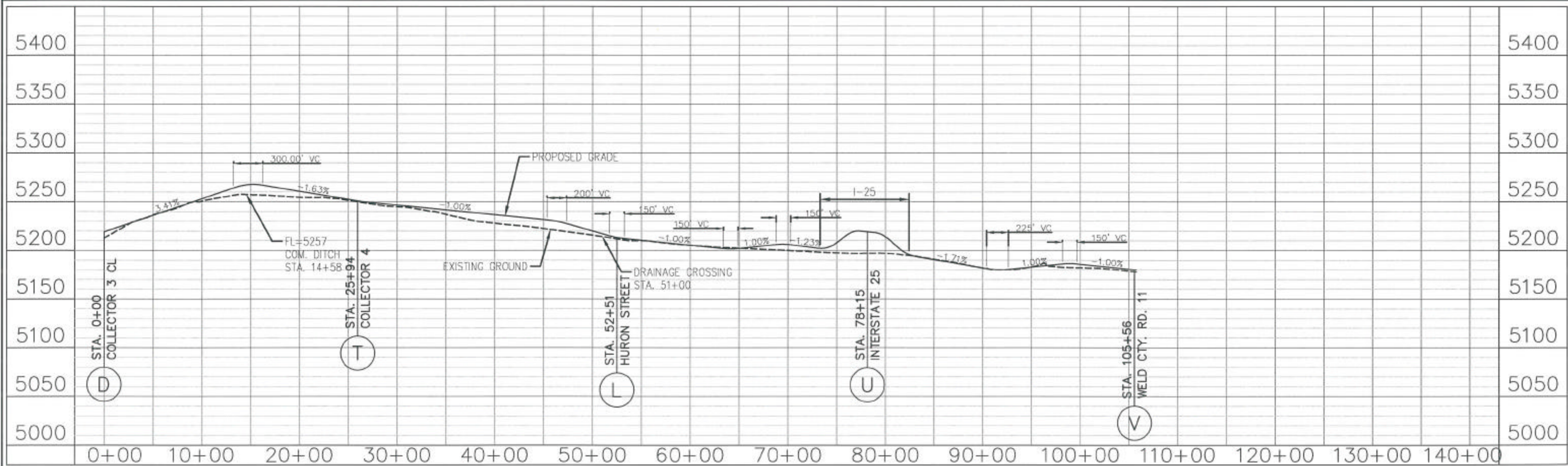
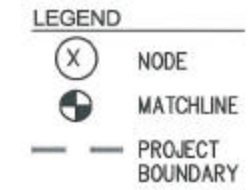
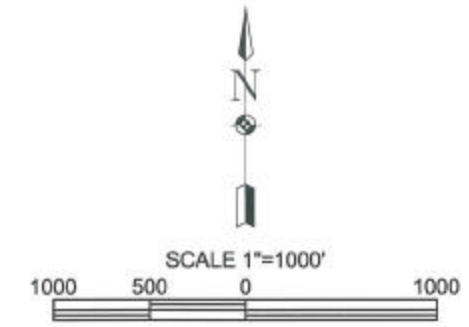
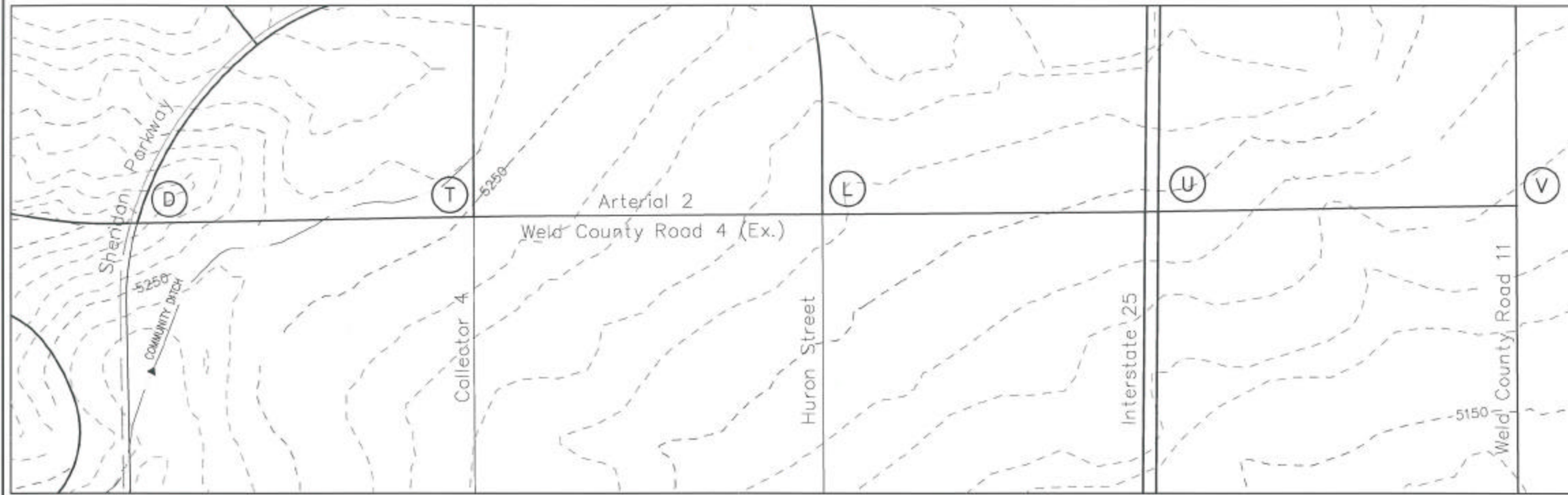


NOTE:
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 MAPS: LAFAYETTE, ERIE, FREDERICK, AND EASTLAKE
 DATED 1965, REVISED 1994

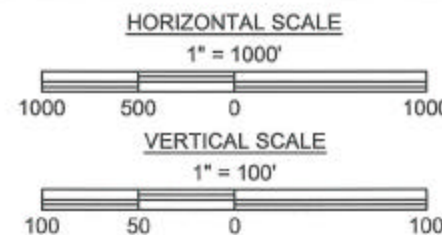


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	DRAWN BY A. REESE SCALE 1" = 1000'				DATE DRAWN 6/21/99 DATE ISSUED

FILENAME: MIN6.DWG



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J. MOORE 6/21/99

PROJECT MANAGER DATE
S. MYERS 6/21/99

SEPT/EMEND/REPLATE/NUMBER DATE

DRAWN BY DATE DRAWN
A. REESE 6/21/99

SCALE DATE ISSUED
1" = 1000'

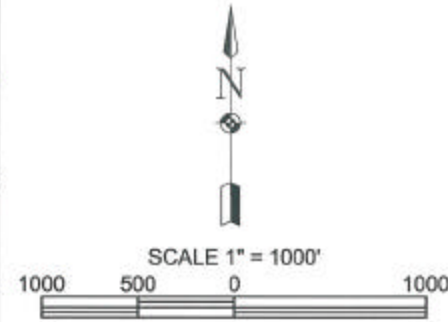
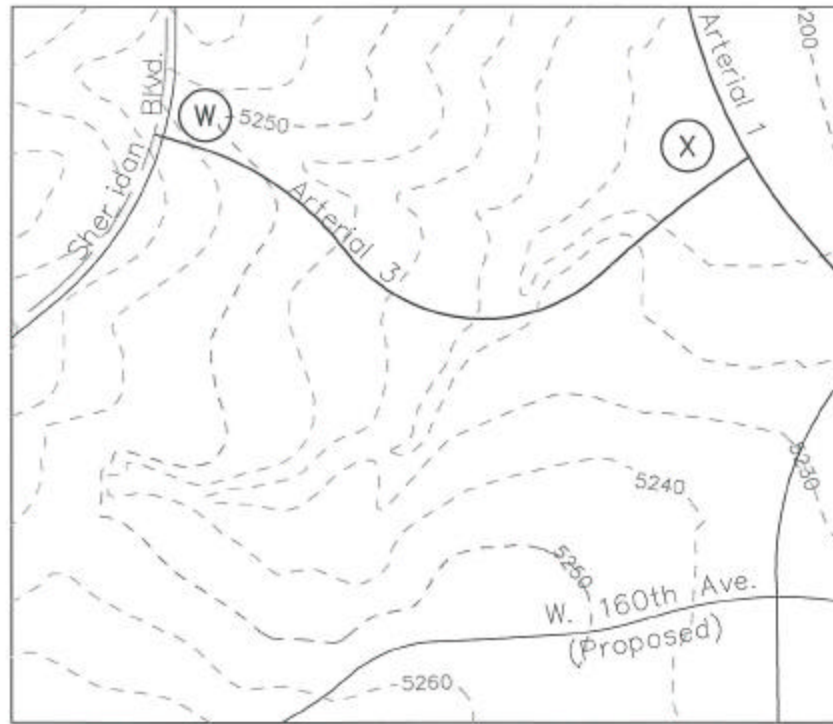
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I-25 SUB-AREA
BROOMFIELD
MASTER PLAN

TITLE OF DRAWING
ARTERIAL 2

PROJECT NO.
346-004

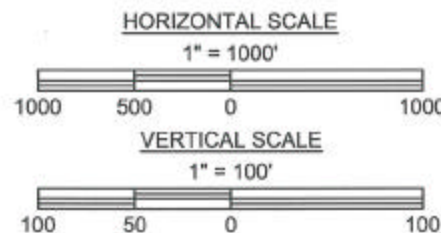
DRAWING NO.
9 OF 18



- LEGEND**
- (X) NODE
 - ⊕ MATCHLINE
 - PROJECT BOUNDARY



NOTE:
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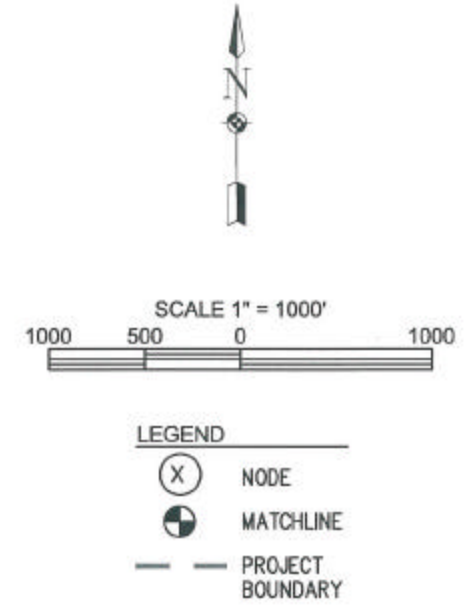
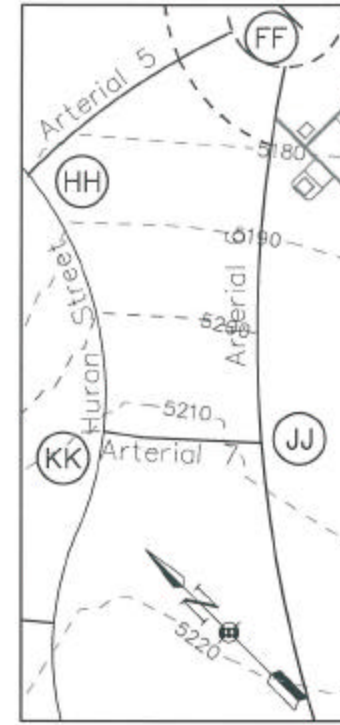
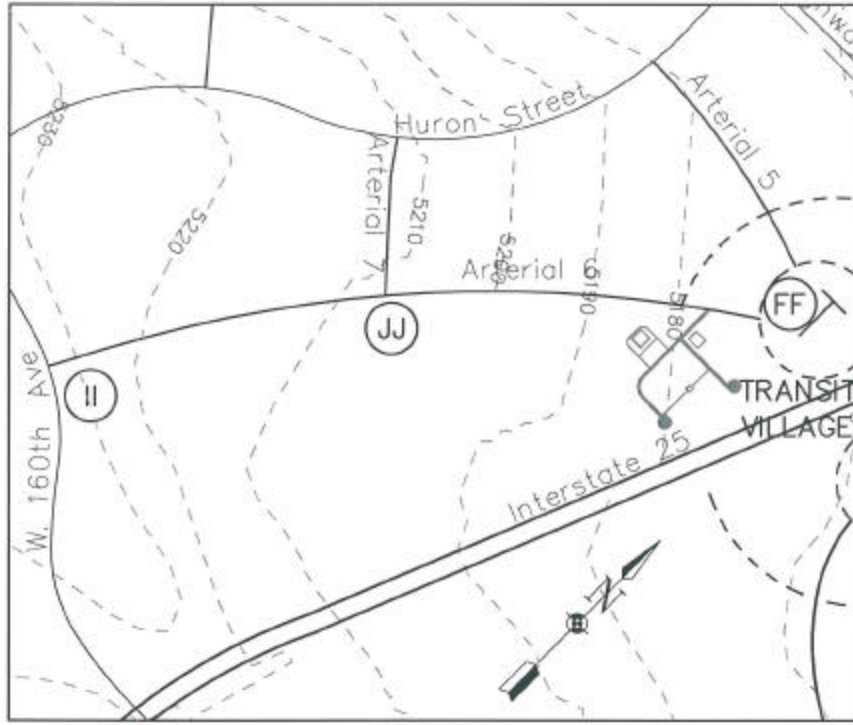
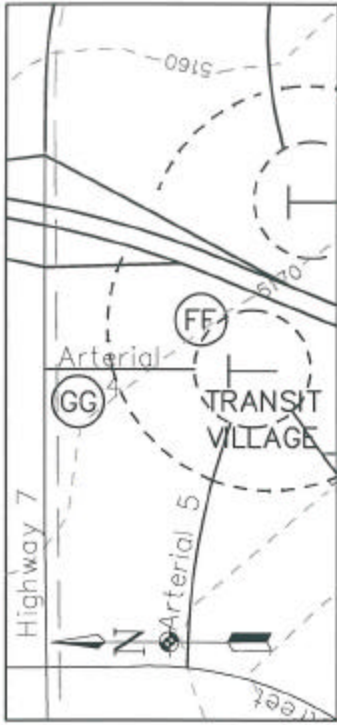
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PROJECT ENGINEER/ARCHITECT DATE
 J. MOORE 6/21/99
 PROJECT MANAGER DATE
 S. MYERS 6/21/99
 SPT/BRANCH/ARTIST/MANAGER DATE
 DRAWN BY DATE DRAWN
 A. REESE 6/21/99
 SCALE DATE ISSUED
 1" = 1000'

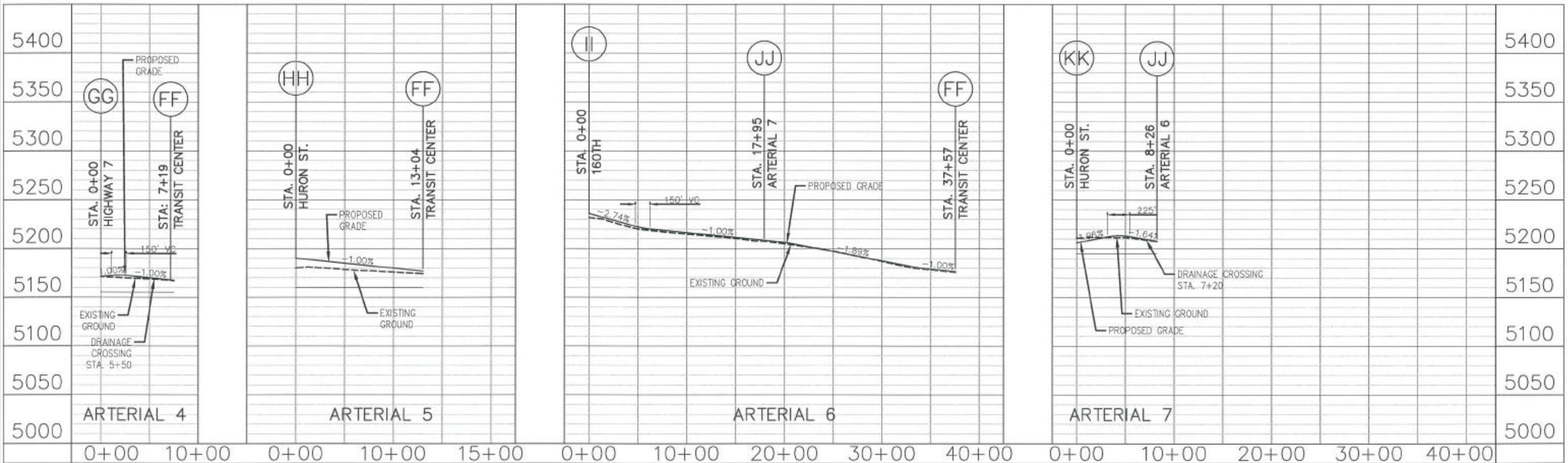
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I-25 SUB-AREA
 BROOMFIELD
 MASTER PLAN
 TITLE OF DRAWING
 ARTERIAL 3

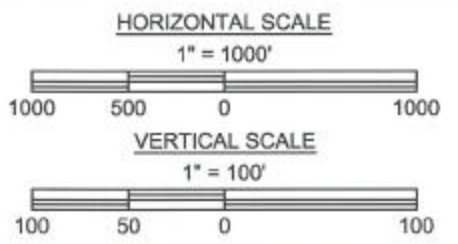
PROJECT NO.
 346-004
 DRAWING NO.
 10 of 18



- LEGEND**
- (X) NODE
 - ⊕ MATCHLINE
 - PROJECT BOUNDARY



NOTE:
EXISTING PROFILE BASED ON USGS QUADRANT MAPS: LAFAYETTE, ERIE, FREDERICK, AND EASTLAKE DATED 1965, REVISED 1994.



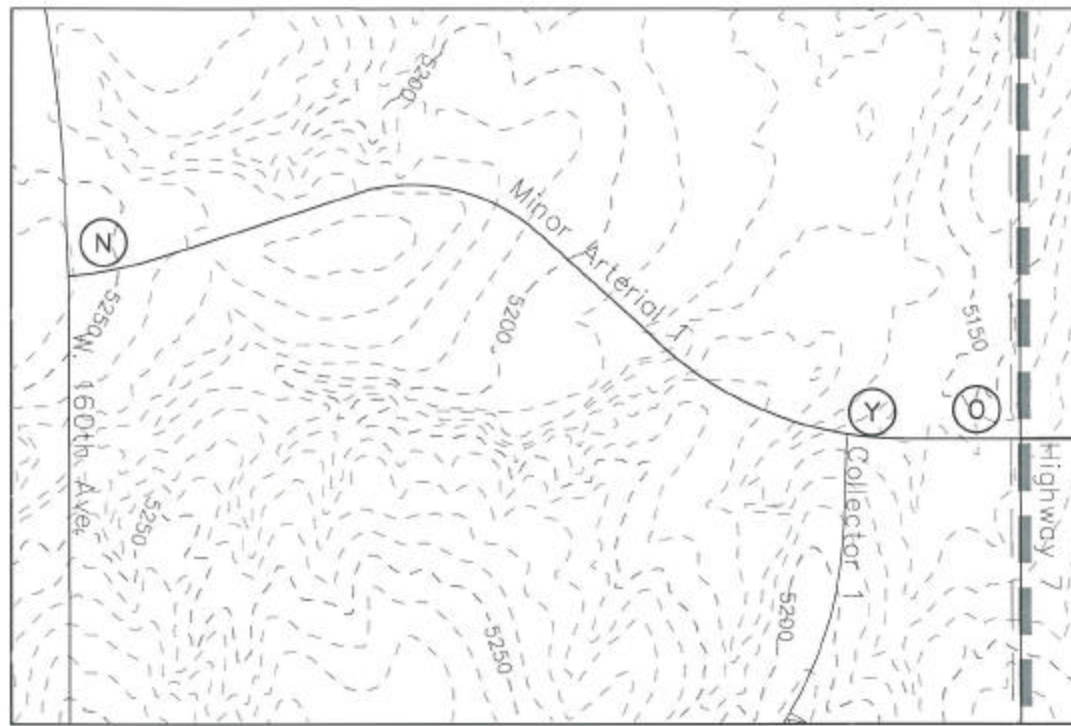
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DRAWING NO. 110F18
PROJECT ENGINEER/ARCHITECT DATE: J. MOORE 6/21/99
PROJECT MANAGER DATE: S. MYERS 6/21/99
DRAWN BY DATE: A. REESE 6/21/99
SCALE: 1"=1000'
DATE ISSUED:

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I-25 SUB-AREA BROOMFIELD MASTER PLAN
ARTERIALS 5-7

PROJECT NO. 346-004
DRAWING NO. 110F18

FILENAME: TRANSIT-1.DWG

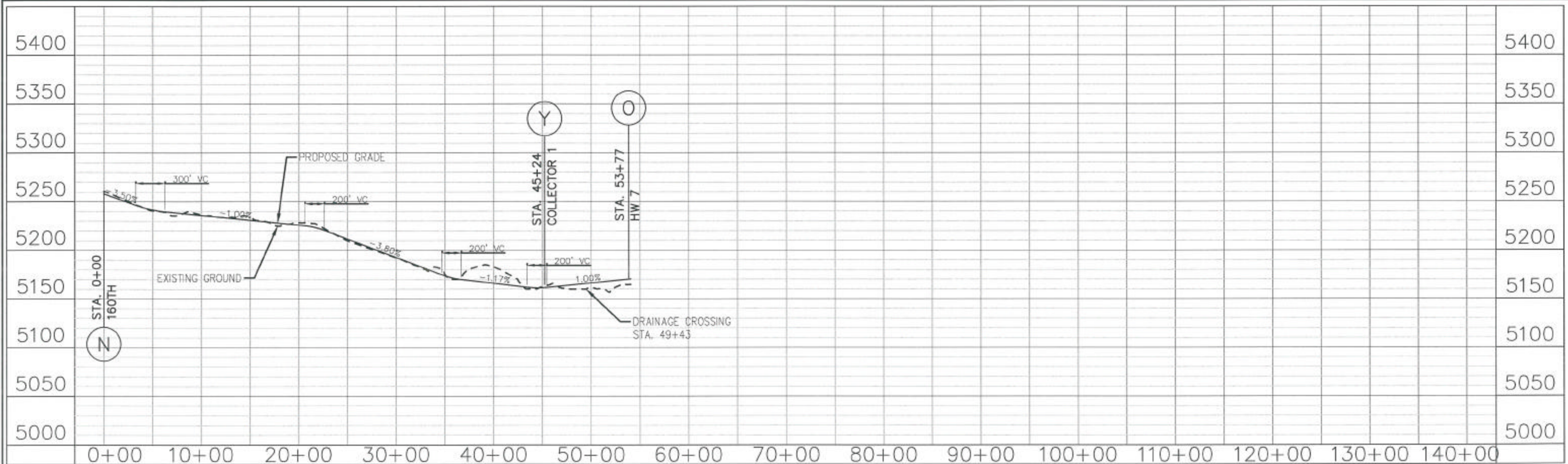
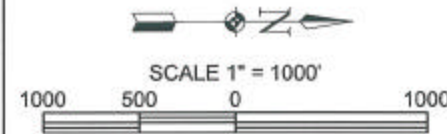


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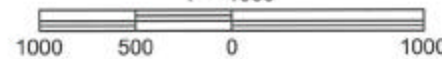
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--- PROJECT BOUNDARY



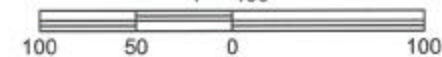
HORIZONTAL SCALE

1" = 1000'



VERTICAL SCALE

1" = 100'



NOTE:

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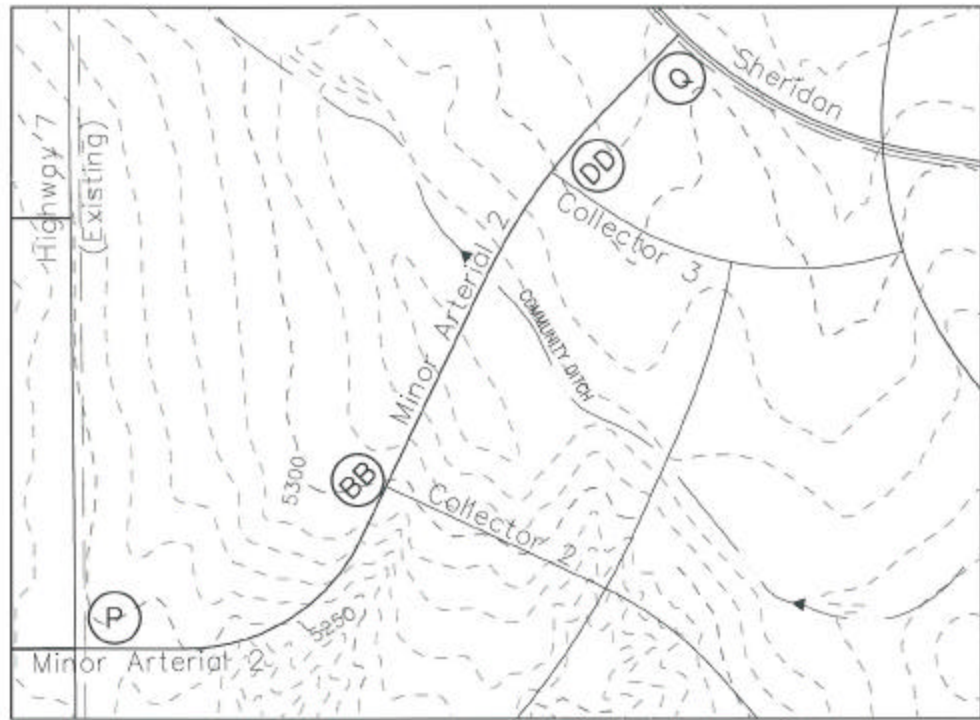
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J. MOORE	6/21/99
PROJECT MANAGER	DATE
S. MYERS	6/21/99
DRAWN BY	DATE DRAWN
A. REESE	6/21/99
SCALE	DATE ISSUED
1" = 1000'	

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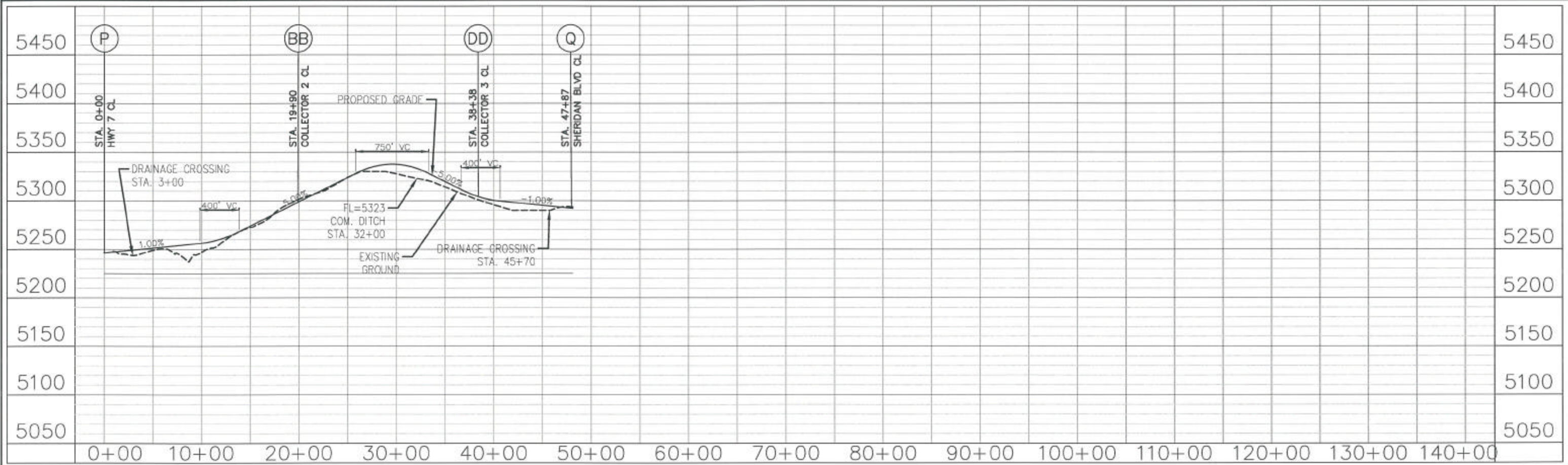
I-25 SUB-AREA
BROOMFIELD
MASTER PLAN

TITLE OF DRAWING
MINOR ARTERIAL 1

PROJECT NO.
346-004
DRAWING NO.
12 OF 18



- LEGEND**
- (X) NODE
 - ⊕ MATCHLINE
 - PROJECT BOUNDARY



HORIZONTAL SCALE

1" = 1000'



VERTICAL SCALE

1" = 100'



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J. MOORE 6/21/99
PROJECT MANAGER DATE
S. MYERS 6/21/99
DEPT./BROADEN/PLANT/MANAGER DATE

DRAWN BY DATE DRAWN
A. REESE 6/21/99
SCALE DATE ISSUED
1" = 1000'

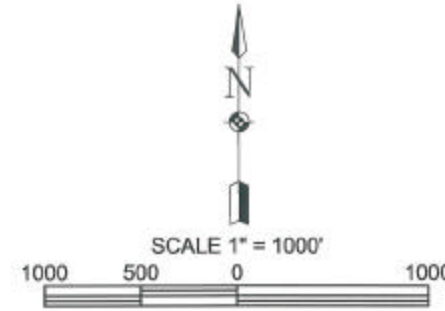
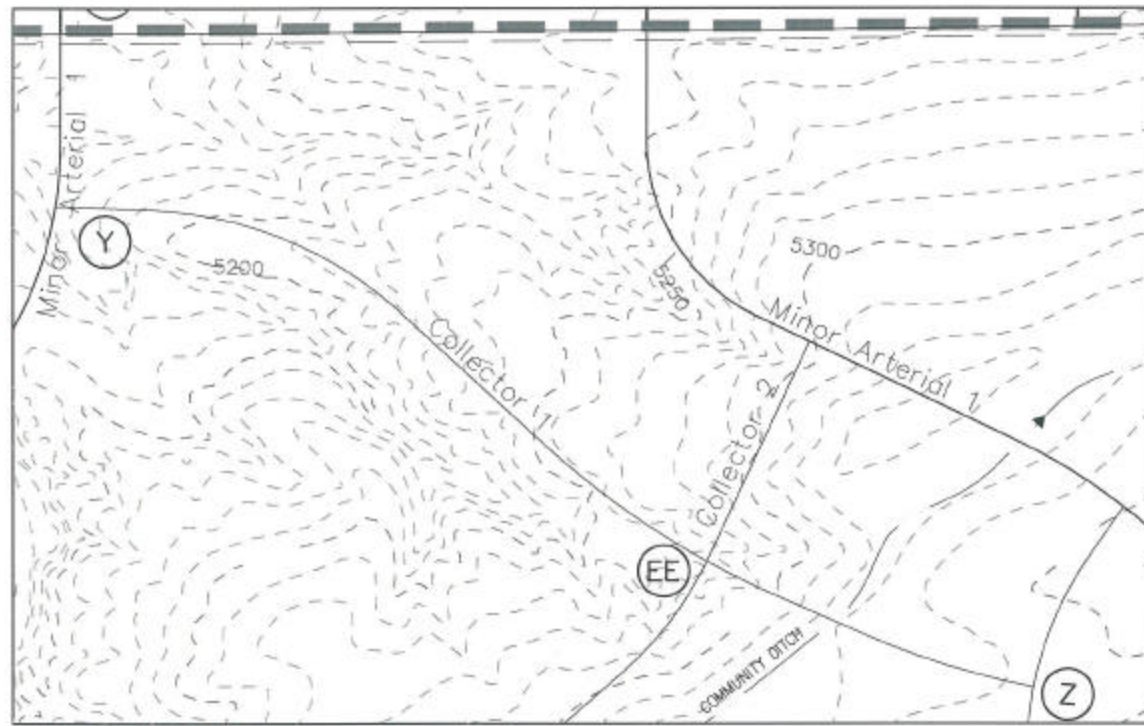
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I-25 SUB-AREA
BROOMFIELD
MASTER PLAN

TITLE OF DRAWING
MINOR ARTERIAL 2

PROJECT NO.
346-004

DRAWING NO.
130F18



- LEGEND**
- (X) NODE
 - (+/-) MATCHLINE
 - PROJECT BOUNDARY



HORIZONTAL SCALE

1" = 1000'



VERTICAL SCALE

1" = 20'



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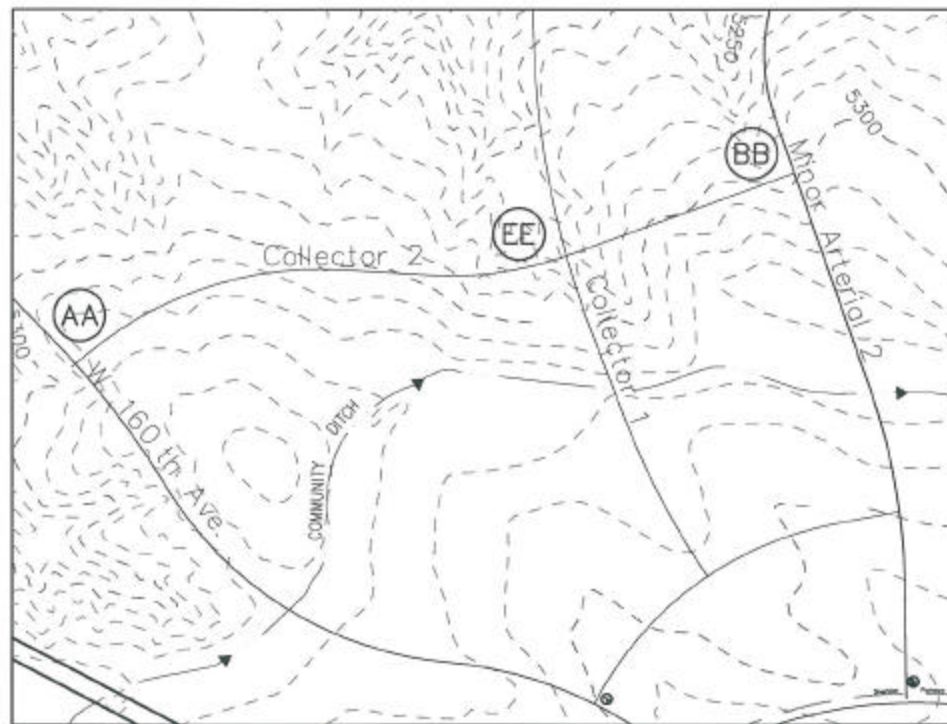
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J. MOORE 6/21/99
PROJECT MANAGER DATE
S. MYERS 6/21/99
DEPT./ORGANIZATION/MANAGER DATE
DRAWN BY DATE DRAWN
A. REESE 6/21/99
SCALE DATE ISSUED
1"=1000'

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I-25 SUB-AREA
BROOMFIELD
MASTER PLAN

TITLE OF DRAWING
COLLECTOR 1

PROJECT NO.
346-004
DRAWING NO.
14 OF 18



- LEGEND**
- (X) NODE
 - ⊕ MATCHLINE
 - PROJECT BOUNDARY



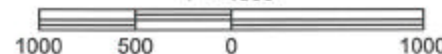
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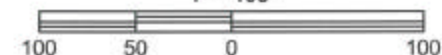
HORIZONTAL SCALE

1" = 1000'



VERTICAL SCALE

1" = 100'



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PROJECT ENGINEER/ARCHITECT DATE
J. MOORE 6/21/99

PROJECT MANAGER DATE
S. MYERS 6/21/99

DEPT./BROWD/WFGAT/MANAGER DATE

DRAWN BY DATE DRAWN
A. REESE 6/21/99

SCALE DATE ISSUED
1"=1000'



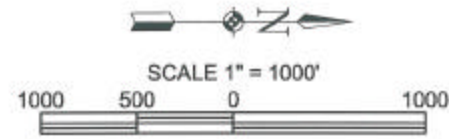
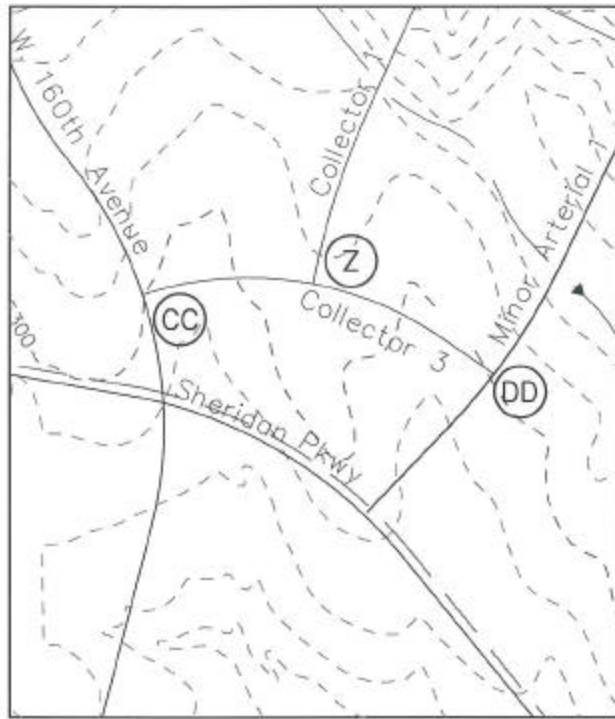
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DENVER, CO 80211-5306
(303) 458-5528

I-25 SUB-AREA
BROOMFIELD
MASTER PLAN

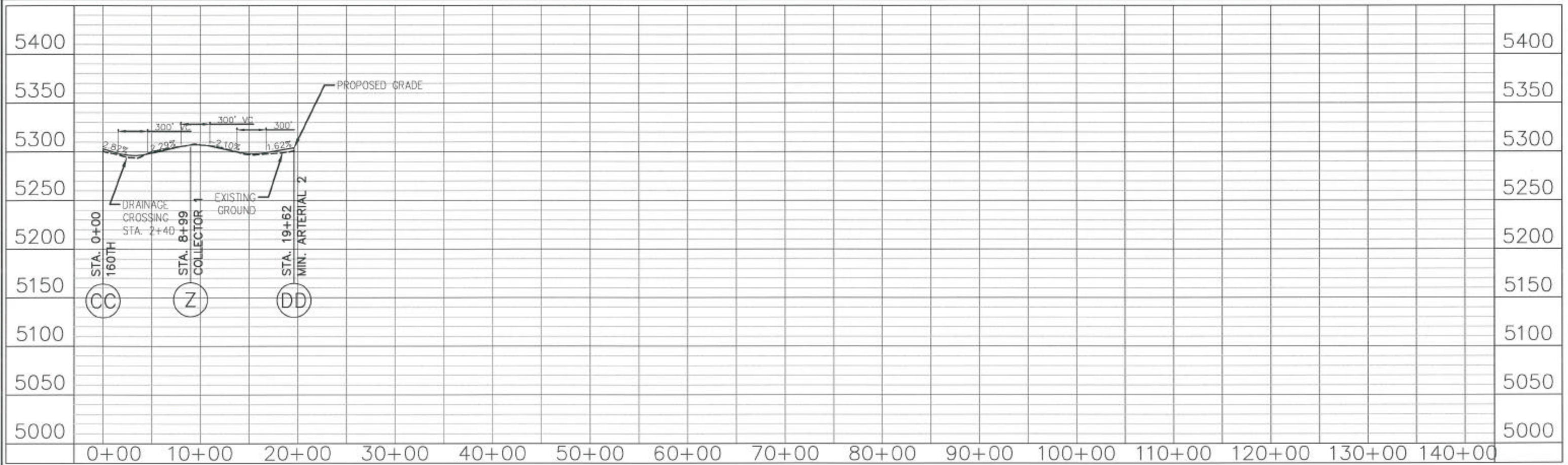
TITLE OF DRAWING
COLLECTOR 2

PROJECT NO.
346-004

DRAWING NO.
15 of 18

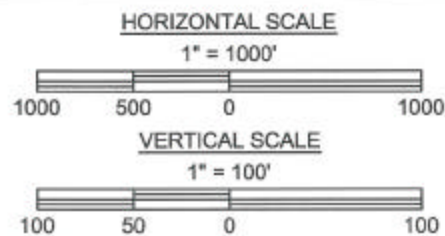


- LEGEND**
- (X) NODE
 - (+/-) MATCHLINE
 - PROJECT BOUNDARY



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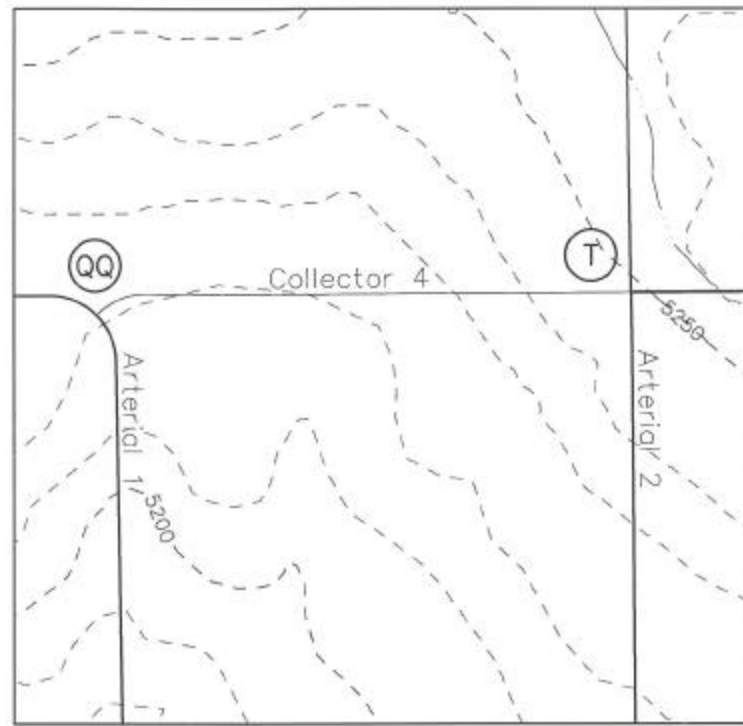
PROJECT ENGINEER/ARCHITECT DATE
J. MOORE 6/21/99
PROJECT MANAGER DATE
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DEPT./BRAND/UNIT/LAT./MANAGER DATE
DRAWN BY DATE DRAWN
A. REESE 6/21/99
SCALE DATE ISSUED
1"=1000'

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I-25 SUB-AREA
BROOMFIELD
MASTER PLAN

TITLE OF DRAWING
COLLECTOR 3

PROJECT NO.
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DRAWING NO.
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SCALE 1" = 1000'

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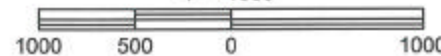


NOTE:

EXISTING PROFILE BASED ON USGS QUADRANT
MAPS: LAFAYETTE, ERIE, FREDERICK, AND EASTLAKE
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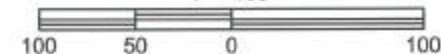
HORIZONTAL SCALE

1" = 1000'



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PROJECT MANAGER DATE
S. MYERS 6/21/99

DEPT./BORO/UNIT/PLAT/NUMBER DATE

DRAWN BY DATE DRAWN
A. REESE 6/21/99

SCALE DATE ISSUED
1" = 1000'

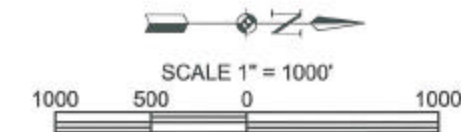
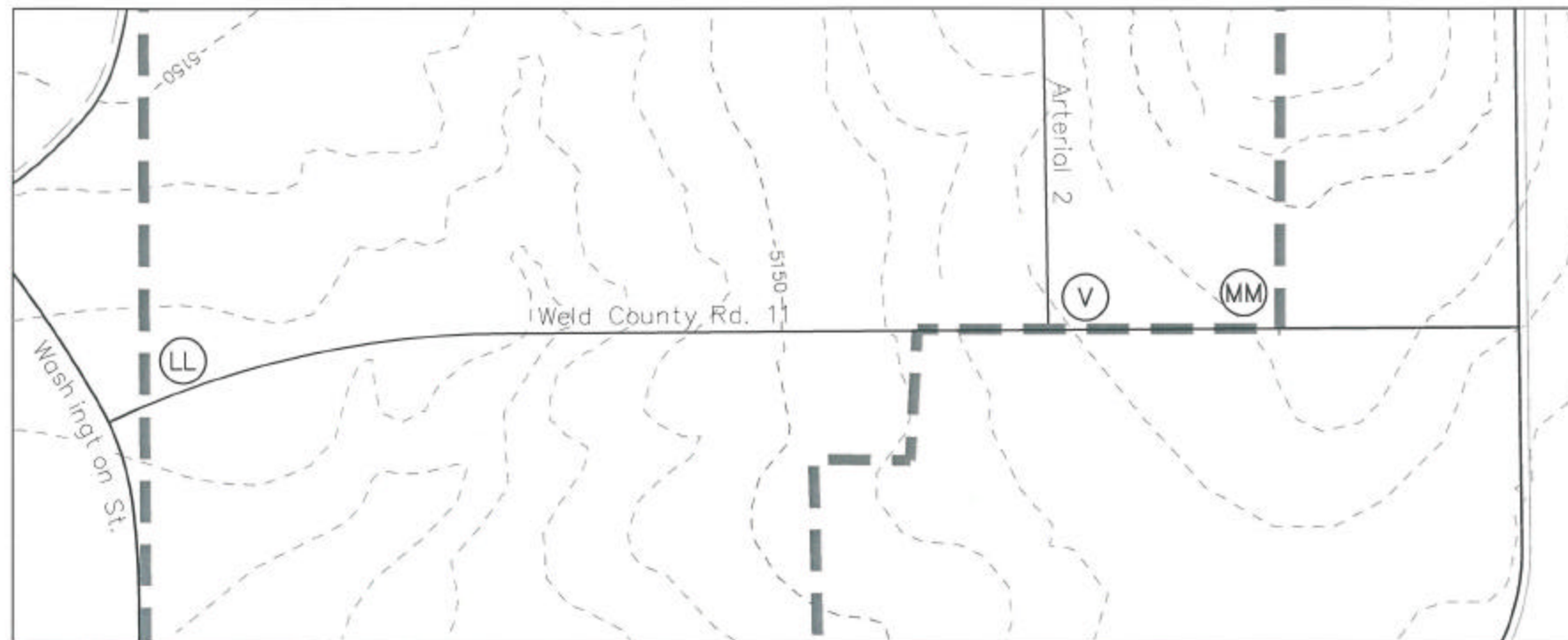
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TITLE OF DRAWING
COLLECTOR 4

PROJECT NO.
346-004

DRAWING NO.
17 of 18

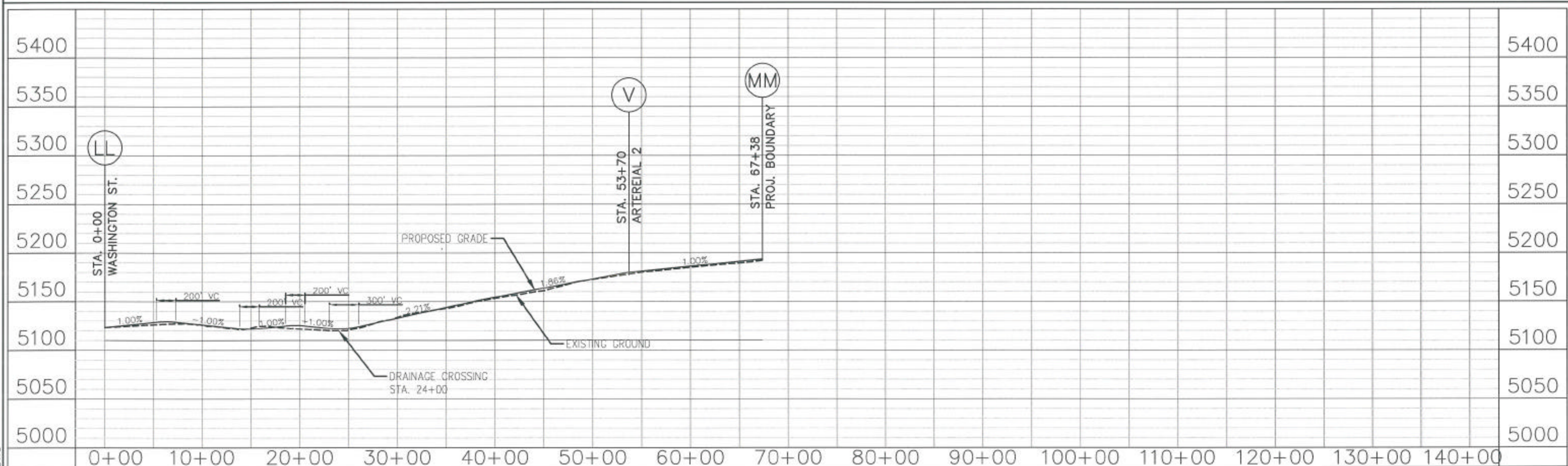


LEGEND

(X) NODE

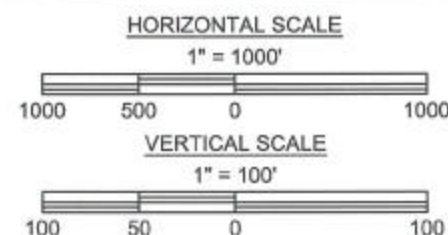
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REPL/AMEND/DELETE/REWORK DATE

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TITLE OF DRAWING
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PROJECT NO.
346-004

DRAWING NO.
18 of 18

